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ABSTRACT

Six papers from the University of South Africa's Conference on Distance Education are presented. They include: "Teaching-Learning Models in Distance Education Using New Media" (Karlheinz Rebel); "Adult Learning in the Context of Development" (Jan R. Hakemulder); "Text Design in Distance Education: Print and Facilitating Adult Learning" (John Aitchison and Jenny Aitchison); "Distance Education and the Regime of Academic Literacy" (John Aitchison); "The Issues of Educational Technology and Curriculum Design" (Felicity Simmons); and "Interactive Multi-media Learning: A Business Case Study in Distance Learning" (Ray C. Johnson). (LB)

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SOUTHERN AFRICA:
PREPARING FOR THE 21ST CENTURY

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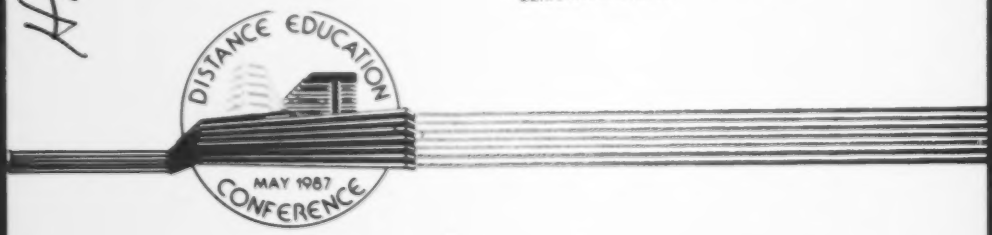

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PAPERS

Teaching-learning models in distance education using new media

Karlheinz Rebel
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1. On the concept of modern distance education

The history of distance education is at the same time the history of the efforts to determine adequate concepts and forms of learning in this mode, adequate in the sense that they may represent a *sine qua non* of learning, especially for adult learners with their differing educational backgrounds and learning abilities, their variety of aims and of conditions of learning with regard to place and time; at least they must facilitate learning. Characteristic of this history over the past two decades have been two tendencies, at first complementary but today in rather a tense relationship to one another. One tendency represents the attempt to adapt distance education or distance teaching as far as possible to the traditional education system, with the intention of guaranteeing complete recognition of certificates despite different study methods and different organizational forms, by means of the same learning content and the same expectations of student performance. This school of thought adopts, so to speak, or lays on itself the burden of proving that distance education has the same status as traditional learning forms.

The other tendency represents a serious attempt to take into account the specific learning needs of adult learners and the significance of continuous learning throughout the lifespan, for instance, for the conservation and improvement of professional qualifications; for the adaptation to or perhaps resistance to social, professional or personal changes; for the development of his/her own intellectual, or moral potential, not least with regard to the fact that a shift of emphasis can now be observed

from primarily career-orientated thinking to other meaningful activities in society, including the use of increased leisure time.

This second tendency can be defined under the general heading of learner-oriented further education in all its forms and at all levels (this includes professional, on-the-job, political, or personal education; and may be pursued with the aim of updating, upgrading etc.), and in which distance education plays an essential part. Further education of this type leads more and more to specific learning content, curricular approaches and learning concepts which can be clearly differentiated from the traditional form of learning based on the classroom model. In this development process distance education is not merely one of the possible study forms, but is also a promoter of this very process.

The variety of manifestations of modern distance education in practice, which is also documented in the variety of termini and attributes used to describe it, cannot be confined within a narow definition; nor would this be conducive to its well-being.

If one starts from a kind of phenomenology of distance education, then the common factors are always - a minimum of institutionalization; the convergence of living, working and learning environments; the optimal and, as far as possible, individual use of the time available to any particular learner by means of a flexible learning arrangement, whereby his/her personal timetable and lifestyle is disturbed as little as possible; emphasis on the relevance of learning content for the mastering of problems of everyday life; efforts to break down existing barriers to learning through specific advice and support services.

Conceptually, the designation distance study corresponds least to this phenomenological description. Distance was an important category as long as wide stretches of coun-

tryside and thinly populated areas were provided with only relatively few educational offers. Distance teaching or distance education were introduced in order to bridge distance with the aid of the medium correspondence text. Nowadays, considering the high density of educational offers in developed European countries, the factor of distance no longer plays much of a role. In modern distance study, prime importance is given to enabling adult students to pursue a course of self-guided study, enjoying exactly the amount of support they feel is necessary, and which they have learnt to take advantage of on their own responsibility. In so far distance education belongs to the large category of so-called "open learning", all of whose manifestations display the common factor of integrating learning into normal life patterns.

This form of learning will doubtless not remain without consequences for the traditional school, higher education and further education sectors, which must grapple with the same societal needs and problems. One can assume that modern distance education and more traditional teaching forms will gradually come to resemble one another conceptually. Common to both is the need of many adults to organize their own learning, at their own learning tempo and in their own learning environment, motivated by usually very personal problems. They usually do not desire external guidance, or at least only insofar as this is absolutely necessary; they wish to enter commitments only as far as is necessary to achieve their self-imposed aims.

From a phenomenological description of distance study to drawing a profile of today's distance student is only a small step, even if the methodological problems are substantial. In the following section the results from a series of investigations are distilled in a summary which allows us to construct the profile of a distance education student and his/her willingness to learn.

In a series of older empirical studies from various continents one could see, at the end of the sixties already, that over 70 % of adults' learning projects were cases of self-planned learning, on which the typical adult spent a time budget of 100 hours five times a year. These adult learners are thereby very often guided by the intention of using the knowledge or skills which they aim to learn to master a concrete situation. Far less frequent is the desire simply to 'know more' or to acquire knowledge for its own sake.

Adult learners also seldom wish to gain 'credits' towards some sort of certificate (Allen Tough 1968).

Today's average American student in higher education is approximately ten years older than in the seventies. The number of part-time students on post-graduate courses is much higher than the number of full-time students. The typical American student is clearly getting closer to the adult on the adult learning scene with regard to his/her personal structural data: "In 1980 the typical college student is no longer a 19- or 20-year-old, single, male student living on campus. Instead, he/she is older, married and lives off-campus." (Quoted from Ch.A. Wedemeyer, 1984, p. 128).

In a German investigation results from various empirical studies are summarized thus (H.D. Schmitz, 1984, p. 200):

1. The assumption that in thinly populated areas more people turn to distance education than elsewhere is false. There is a high correlation between density of population and density of distance education students.

2. The number of distance students who choose distance education due to lack of other alternatives is very small. The decision in favour of distance education is rather an expression of a positive evaluation of this form of study.

3. Participants in distance education value the greater freedom in choosing the actual times at which they learn in contrast with other learning organizations with high proportions of direct functions.

4. A notable group of distance students prefers the individual study mode. The fear of losing time by learning with others may possibly play a part here, though this does not imply rejection of social learning as such.

5. For two-thirds of all distance students it is particularly important that they receive in a distance education system a guided study programme, and can have their learning progress continually checked.

If this phenomenological description is now transferred to the conceptual plane, than the term "(guided) independent study", with its individually tailored amount of support, corresponds best to this conception. To this belong also the terms "part-time studies for working students" and "part-time upgrading measures for working students". A common factor of all these is that they make possible the integration of learning and life. At the same time these statements, as well as the empirical data on student profiles, contain the insight that the learning skills and willingness to learn of adult students are of prime importance in generating successful learning processes. Both are retained up to old age if general health is good, although certain shifts of emphasis and different strengths and weaknesses can be observed (A.M. Huberman, 1973, p. 14-138). Aptitude and willingness to learn can at the same time be influenced, particularly through individual learning efforts, but also by suitable pedagogical intervention from the institution which is supporting the student.

Necessary for the realization of these conceptual ideas of distance education is the use of communication media and information technology (i.e. the "new media", in specific pedagogic contexts). The question arises, there-

fore, as to the role of the new media within distance education; what is their teaching-learning potential in employing existing learning aptitude to the full, in activating an existing willingness to learn and thus to make teaching-learning processes possible under the specific conditions of distance education in the sense of self-directed adult learning?

But first I will deal with the construction of theoretical educational models as the condition of the meaningful use of media in distance education, before putting the spotlight on the use of media in distance education as such.

2. Teaching-learning models: on their definition and on their function in distance education

Whenever the term "model" is used in this paper, then - following the General Theory of Models of Herbert Stachowiak - model is understood as a model of something concrete, as a representation of a natural or artificial original. "Models are in this sense representations of an original or of a constructed infrastructure." (W. Einsiedler, 1985, p. 7). A model does not include all original attributes, but only those which seem relevant for the deviser or for the user of the model. This selective character finds expression in the key questions: What is represented, for whom, when and for what purpose? The model does not refer, then, to its original as such, but always fulfils a replacement function for particular subjects of cognition or action, within certain time limits of the original representation, and is relative to certain ends and aims, which the construction and operation of the model serve. "General" is the term given to Stachowiak's theory dealing with model construction, because all human knowledge is gained in terms of and by means models.

In general teaching theory the inclusion of models has become something of a fashion, with a corresponding loss

of clarity and precision (P. Brezinka, 1984, pp. 835 ff.). This does not, however, carry the implication that we can dispense with the concept of models, which has particular advantages for distance education in higher level up-dating/up-grading. On the contrary, we shall make every effort to define the concept with exactitude, whilst recognizing the limits of the model construction approach.

The advantages of the model concept lie in particular in its representative function, which allows the portrayal of selective-hypothetical elements and relationships, and the construction of networks to facilitate the comprehension of reality with a particular intention in mind. There it can be a case of depicting conditions either for certain actions with particular aims, or for statements with a particular information content. Theoretical educational models which are understood thus can illustrate theories and assist in generating hypotheses, but are in themselves not theories.

These theoretical models, applied to teaching practice, are a symbolic representation of typical structures or procedural forms of teaching, justified on organizational, methodological or psychological grounds, whether they represent a particular theoretical position (e.g. the "Berlin General Teaching Theory) or one or more actual lessons.

In the development of DIFF distance education projects for higher level updating/upgrading or inservice teacher education the aims of proceeding with the aid of a theoretical teaching-learning model are: to represent not only curricula decisions, but also the methodological instruments in a consistent model of teaching and learning; to communicate to all those involved in the project development, in all phases of development, curricular decisions which are well-founded in theory; and to give assistance to the learners, here, for instance, teachers in primary, secondary and further education, so that they

not only process knowledge during their updating/upgrading courses, but also learn to transfer this to their own work situation. In other words, so that they know how these transformation processes work, what they aim at, what justification there is for these aims and which procedures were used to construct optimal study materials for guided independent study (Kh. Rebel, 1985, p. 113-176).

These theoretical teaching-learning models must therefore provide not only factual knowledge but also procedural (action-orientated) knowledge as one of their elements. This procedural knowledge can then be used by participating teachers in their lesson or course preparation, either in that they choose a similar procedure for their own teaching project, with the assistance of basic models founded on teaching theory, or, in the words of G.G. Hiller, to construct for themselves a theoretical "educational mini-cosmos". This mini-cosmos would not be beyond their capabilities - unlike highly elaborated models for lesson preparation founded in general education theory - but would give them practical assistance in organizing their lessons/their teaching with more attention to method and more intentional reflexion. Thanks to the model, they can reduce the complexity of the interaction in the teaching process, understand the context of implementation better, forecast the effects of particular methodological decisions on the whole teaching-learning system and be better able to control the effects of certain situational conditions.

The instruments of analysis used by the developers of distance education materials, key questions, etc., in short, their instrumentarium founded in teaching-learning theory can be used by course participants as procedural knowledge for their own teaching, either in unaltered or modified form, to create their own models.

"In contrast to teaching-learning theories, a teaching-learning model with its theory-like realization of the

totality of teaching and learning in instructional situations is particularly suited for the development of study materials in guided independent study, as well as in its implementation in higher-level further education and in its transfer to the practical teaching activity of the participants. Its suitability can be attributed to its heuristic function (representation of reality and anticipation of possible constructed events). It opens up specific problem horizons, thematizes new or different/controversial questions, without seeking to determine instructional processes, and it can thus make the practising teachers, as part of their own professionalization process, into equal partners in the dialogue with subject-matter experts and experts in discipline-based teaching theory. In the process of learning to work with teaching-learning models, to make use of their characteristics (or a selection of them), i.e. representations of real instructional processes, their reduction in certain problem contexts for particular purposes, their emphasis on particular situations, the transparency gained by openly stating curricular decisions, with regard to intentions and their legitimization, their opening up of perspectives, e.g. towards certain key questions of teaching-learning theory, their productivity, intentionality and instrumentality, the teacher may be in a better position to plan and realize instructional processes or teaching, without expending an unnecessary amount of time and effort, to make predictions about his own effectivity in the teaching-learning system, to describe the realities of teaching-learning contexts in a mode adequate to the subject, and to improve it (K. Aschersleben, 1983, p. 58-84).

What has been said here is true for any sort of teaching. For distance education, dependent as it is on absolutely consistent curricula, on a choice of study aids and media based on a theoretical assessment of the teaching-learning context, and, finally, on systematically produced statements as to how individualized learning and learning

in a group can be combined, using the existing conditions in any given study organization, working with theoretical teaching-learning models is an exceptionally important instrument. In this respect West German education theory has a lot of catching up to do, compared with other countries.

3. Distance education and media - some reflexions on a complex problem

3.1 There is hardly a more controversial question today than that of the "new media". Some talk of them secretly taking over power, a particularly horrifying vision for many an observer, when these new media enter into an alliance with the other superpower: the world of scholarship and science. Others accredit the new media with the power to destroy human relationships, the direct communication which employs no medium; to isolate individuals even further, in that they replace personal, direct communication in almost every field of everyday life with technical communication, until life is totally digitilized. Other authors display before us a fascinating panorama of the technological possibilities of the "new media" for the learning needs of every man, woman and child.

If, instead of listening to the experts, we ask 'the man in the street' for his opinion, we find a spectrum of opinion as ambivalent as that concerning the world of scholarship. A poll conducted by the Society of Mathematics and Data Processing, using a representative random sample of 2000 West German citizens in 1983, elicited the result, reduced to a simple formula, that the majority of our citizens are themselves 'of two minds' about this question, displaying ambivalent attitudes, seeing the modern information technologies as a source of both anxiety and assistance.

On the other hand, millions of adult learners take advantage of the educational potential of television and

radio." A prolonged study, which investigated the use and assessment of television, radio and daily newspapers by young people and adults in Germany over the period 1964-1980, demonstrated persuasively that differentiated and specialized forms of usage of these 'topical' media are crystallizing out, that evaluation and use of television for the mass-market are, due to its unspecific profile, decreasing amongst certain age groups, in particular amongst formally well-educated, politically interested young people, to the advantage of specialized media for audiences with homogeneous information needs (K. Berg/M.-L. Kiefer, 1984). Finally, in the meantime we know much more exactly why certain young people make use of certain media and their offers, and not other media and their content. In particular, the hypothesis of the automatic use of media (the more media offers, the greater the audience and the more intensive the use) is refuted (H. Bonfadelli/M. 1986).

3.2 This paper operates from the following position:

1. The "new media" are already a part of our daily lives (and that is the difference between now and the media euphoria of pedagogues and technicians during the 60s) and will be more and more so in the years to come, an inexorable process because commerce and industry in particular need the new media, but also because general needs in our society are conducive to their growth or even demand it. The study of the ARD/ZDF (the two nation-wide West German TV-corporations) media commission already cited comes to the conclusion that the youth of today is a multi-media generation, has grown up with media, integrating them into their day-to-day lives. Teenagers and young adults turn to the media in an active, not passive, unprotected way, and use them to satisfy particular needs, to solve problems or to make them at least tolerable.

   The study should not be read as though there were no serious problems with young people and the media, no

failed existences. But the study relativizes a host of statements, found especially in the literature propagated in Germany, which are based too closely on a particular medium and its effects, not to speak of all the speculations on the effects of the media. The "new media", to put it briefly, already miror a different world and changed cultural value patterns. So what young people desire and demand, for instance, and seek to achieve through the use of media is: easy and quick access to information, reduction of time spent on learning, facilitation of social contacts and provision of conversation topics. The study also found a strongly marked tendency among this group to expect from the media a renewal of sensuality, animation in all areas of life, satisfaction of the need for sensational scenarios and provision of 'action' (H. Hengst, 1981). In a few years' time the young people studied here will be the adults to whom higher education, commerce, industry, politics and culture must address themselves. For these youngsters our world is a world communicated through the media. They will expect to find in educational offers something of the "media language" to which they are accustomed.

2. The pedagogues will not be asked whether they like the new media or not; which influence they should be allowed to have and which not. If their only reaction is to reject the new media, they will not even be able to slow their victorious march, let alone stop it. They would only put themselves into an even more marginal societal position than is already the case, and this would make their decisive tasks even more difficult, namely, to assist children to become adults and adults to become or remain emancipated people, through learning in all their environments - of actual and reflected experience, of action, and of thought, and also through discussing the question of the 'new media' as objects and instruments and also by actually using them.

3. Today (as in the sixties) we pedagogues lack convincing concepts on media education and media methodology. Such concepts - operating within the limits of realistically assessed pedagogical possibilities, which could, however, never replace a good social and industrial-commercial policy towards the role of the new media - could turn the educational potential which the new media doubtless posses to good use for pedagogical ends, thereby possibly reducing the dangers of the media revolution.

4. We have already gained a wealth of practical experience with the "new media": this must be the starting point to support positive trends which are regaining strength with the public, towards a sensible, differentiated use of the media, including the public television service. This is all the more urgent since the importance of further education at all levels of our education system and for all societal groups is generally being ever more clearly defined and justified. Modern further education, as we attempted to define it in the phenomenological description of distance education, can no longer manage without modern communication media and information technologies. This is particularly true for modern distance education. Its characteristic features and at the same time advantages are: flexibility, individualization, release from the confines of place and time of learning as fixed quantities, convergence of learning, working and living environments, student negotiation of learning content and method etc.; all these advantages can only come to full fruition with the aid of the modern media.

5. Communication between everyday life and the world of scholarship and science must be regarded as one of the main tasks of modern, high quality further education. The transfer of academic work into politics, industry, medicine etc. - from research experts to practice ex-

perts - functions well. It is perhaps not particularly easy to manage; problems of language for communication arise, and it is necessary to translate highly abstract explanatory models into practical application contexts; the pace of scientific advance, particularly in isolated cases, adds to the difficulties, since it gears the success of knowledge-transfer all too closely to the speed of the transfer. Despite these growing impediments, the mutual dependency of theoretical reflexion and everyday practice is also growing.

As approaches become more specifically geared to certain target groups and particular occupational fields, so the transfer of theoretical knowledge from the producers of knowledge to the users of knowledge must become equally more specialized and dedicated, with increasing influence of the producers; as the functions of knowledge acquisition are more generally defined and with rather more anthropological orientation, so aspects of procedural knowledge within the individual's living environment, with its specific action and value patterns, must be more strongly represented. But for both approaches it is true to say that they must make use of the new media if they do not wish to fall way behind and completely lose touch with scientific advance.

6. Particularly urgent, but also particularly difficult is the transfer of theoretical knowledge at a level below that of the experts: higher level further education is here assigned the task of enabling as many adults as possible to assess the pro and contra of and judge those scientific advances, at least in their basic propositions, which are directly relevant to them, and to take part, at different levels of reflexion, in the ever more urgent dialogue between science and society, in a way which is adequate and possible for them, assisted in significant areas by the media (especially in their mass-market forms).

3.3 The problem of justifying the use of media by education theory

Which technological characteristics of the "new media" make them suitable for the transfer of theoretical knowledge to non-experts and particularly for use in the context of distance education? What is really new in the new media is not the individual technologies, as advanced as they might be, and as many new technological innovations might be added in the next few years, but the integration of broadcasting, telecommunications and computer technology and their many different linkups, which often offer ideal assistance for the widely varying needs of different learner groups.

According to the different needs, educational backgrounds and available time budgets, new forms of information recording, processing, storage, communication and retrieval are thus possible.

The characteristics of the new media: systematic structure, many different possible combinations, flexibility of the individual components and openness for all forms of coding make them attractive to private and commercial, public and scientific users alike. At the same time the boundaries between individual and mass communications are becoming less precise and forms and habits of media use are being established which could again in turn have an effect on individual elements such as television. Above all, the concept of a flexible learning environment, with its integration of learning and life is now possible.

But the problematic side of using the media becomes obvious at this very point: how will individuals, groups or society as a whole benefit from this unimaginably extensive knowledge which - converted into information - can only now, by means of the new media, be processed, stored and made available? Information always needs an element of meaningfulness if it is to be relevant for human learning. Relevance and meaningfulness do not, however,

exist arbitrarily in a vacuum, but are again related to the intellectual, emotional and moral processing capacities of individuals. But what happens to the individual human being in this context in which new media, and the computer in particular, allow or demand the rationalization of intellectual work? This means the intelligent processing of data and information in the face of unlimited knowledge, at least theoretically available to anyone. But the price of this rationalization is that the necessary processing operations have to be structured for the machine, and that rationality and the capability of making decisions which have been entrusted to man only, must be handed over to the knowledgeable, "intelligent" computers, even if only, at present, of the fifth generation. Does the individual have to be satisfied with the "left-overs" (a characteristic term in many publications on the new media), i.e. with his/her emotional capacity, which is not controlled by any methodical reasoning? But what has this to do with knowledge transfer, which not only involves content which is well-founded on scientific theory, but also the possibility of checking the methodology of hypotheses and results, and the ethical aspects of this process? This definition of knowledge transfer would be diametrically opposed to an organizational model which understands information processing as a mechanistic, factory-like process.

All these considerations tend to support the views of media experts working with the more traditional audio-visual media, indeed, to strengthen their conviction that only a total educational concept which gives primacy to educational aims allows integration of the new media in accordance with pedagogical principles, as instruments of communication, here in higher level further education. Then, however, the new media allow, to a degree never before achieved, open, self-directed adult learning, with elements of support tailored to individual needs, and in a meaningful, theoretically reflected combination of individual learning with group learning, which would not be

possible without media communications. This, however, is exactly the essence of the future of the new media in distance education!

4. Examples of media use in distance education

There is only room to mention here a few of the larger West German projects using a multi-media approach in the context of modern distance education. The cooperation of various partners at all levels of project development always plays a decisive role.

4.1 Experts in key positions, such as teachers, lecturers, course coordinators, and trainers are continually dependent on knowledge transfer, which on the one hand keeps them up to date with the latest development in their discipline and on the other hand facilitates the transformation of academic knowledge to user-orientated knowledge, for instance by means of a professional selection of content and of work-related criteria, and their exemplary use in the relevant job field, whereby, for instance, in pedagogic work areas not only content but also procedural knowledge for the generation of theoretical instructional models is taught. The new media can assist in representing the realities of practice, for instance, in TV case studies. They give examples of pedagogic activities, broadcast studio discussions to communicate both academic and everyday knowledge and to exchange experiences, and they admit conventional media such as the telephone to this media system, which facilitates direct contact between teacher and taught, without interrupting the everyday schedules of participants. The computer, with or without the video recorder, can also be used in the same media system to simulate certain skills and to control learning progress (understood as a supporting medium).

a) The TV and Radio College Courses, in which the German Institute for Distance Studies at the University of Tübingen (DIFF) plays a decisive role, and which have

been accompanied by research studies for many years, document with their large enrolment figures and the generally high proportion of satisfied students that knowledge transfer with the aid of media is definitely possible, and pedagogically acceptable. These large-scale projects are also capable of development as regards media technology and media education theory to include the new media, for instance, storing programmes in other media systems and thus extending their use to other study contexts; inclusion of interactive videodiscs, floppy disks in combination with video cassettes and written study materials etc., whereby the present basic conception would be retained.

As a typical TV College Course for experts in key positions, in this case for teachers, we can cite, as well as "Children of Migrant Workers in our Schools", as perhaps the best example, the TV course "Teachers' Problems - Students' Problems". Using a curriculum based on new insights of psychological and teaching-learning theory, TV case studies, studio discussions, experts' arguments, discussions between groups of teachers, telephone feed-back etc. this course attempts to make teachers conscious of the cognitive processes which govern action, through visual representation, and of their own attitudes and behaviour and to give teachers the necessary procedural knowledge to choose alternatives, to look at different perspectives before themselves taking action, to gradually alter their own behaviour quite radically through trying out alternative modes of action, to extend their repertoire of methods and thus experience a really effective in-service education course in the sense of a permanent alteration of their own behaviour patterns. Without the many different media, including the telephone, a project of this nature, with such educational aims, would not be possible.

b) A project which goes one step further in the direction of the new media is the DIFF project KAVIS, which stands for "Knowledge Acquisition Video Instruction System". The components of the title already show the character of this multi-media system which combines video cassettes, teachware (floppy discs), written materials and group work. The adaptable feedback system takes into account the behaviour of learners when confronted with new subject content; at the beginning factual feedback geared to right/wrong answers only is given whereas later with increasing consolidation of cognitive and affective goals, corrections which are more directly geared to the actual mistakes made can be called up. The adaptable intervention approach realized in the KAVIS System therefore provides for a finely graduated feedback system, which is learning phase specific. It differentiates between, on the one hand, facts and knowledge and, on the other hand, between understanding and structurization. These two different learning phases are at the cognitive, affective-motivational and the intervention and regulation levels.

Regulative prologues give learners factual information about the type of mistake they have made, and enable them to search for the mistake themselves, and thus to learn constructively from mistakes. If a student requires further help, he/she can call up a further, content-related feedback reference or, finally, have at his/her disposal audio-visual subject-content information related to the mistakes made. This KAVIS project, which has been thoroughly tested with a large number of students, is being developed further, with the aim of increasing its flexibility and above all, to strengthen the dialogue character of the system and therefore of the selective approach.

c) Finally, let me mention a series of DIFF projects with the theme <u>Teaching and Learning with the Computer</u> in

particular subjects. The starting point for these projects is a kind of basic module (fundamentum) which assumes no prior specialist knowledge and again, as a multi-media project, introduces the participant to working with the computer as an instrument. Further, subject-related projects build on this foundation module.

4.2 Those interested in general, academic further education generally show a wide variety in their learning backgrounds, with regard both to content and to method, and need important insights from scholarship and science to be processed in a way suited to their particular learning situation. More and more often this means using the assistance of new media. Their aims are usually orientated less on knowledge which can be directly used in the working context as on knowledge which is relevant for their own development in the direction of emancipation and self-determination.

a) For this target group, as has been practically realized in large projects, two different concepts of teaching-learning systems, employing a variety of media are possible. The DIFF project "Village Development", now in production, furnishes an example of one type. This concept lays great emphasis on complex structurization of the teaching-learning process; it uses the specific 'language' of television in the TV programmes, which will all be available on video cassette for group work, and the content of the written study materials, which are at a relatively high level, is highly differentiated for a variety of addressees. Extending the media components to include, for instance, videodiscs is easily possible and is being tried out at the moment in model projects.

b) The other concept, realized in the "Cable Academy" of the South-West German Broadcasting Company (SWF) in Ludwigshafen and which will be continued in the "Tele-Academy", a cooperative venture between the SWF, other

broadcasting companies, the DIFF, institutions of adult further education etc., operates with a considerable reduction of the specific television idiom, depending rather on authentic confrontations with 'big moments' in research and teaching, expounded by experts and communicated by the mass media or from secondary storage systems. It also documents the reception of these moments by the "well-informed citizen". The written study materials will be limited to an absolute minimum of aids to understanding. Controversial points brought up in broadcasts and in the written material can be discussed in small groups. The telephone will also play an important role here, to make possible the dialogue between "experts" and "well-informed citizens". In a few years time a feedback channel will be available which will mean a tremendous extension of these possibilities of interaction (rather: exchange of ideas).

4.3 These are only a very few examples of the - in my opinion - successful inclusion of new and old media in further education offers for adults in the distance education mode of study. Many other examples could be added. Noteworthy, and characteristic, is that a line of development is observable with regard to media use, from the inclusion of mass-market media elements, in particular TV, through high-quality radio broadcasts in long-term, rather systematically structured educational offers (Radio College Courses), to the last-mentioned examples which are moving in the direction of new media for particular target groups. Nothing will hold back this continual development now, and the relationship between the further development of the media and the inclusion of these new media in distance education is increasingly taken for granted. The projects of the European Commission in connection with COMETT, SATURN and other large projects show very clearly that, particularly outside the Federal Republic of Germany, amongst our European neighbours, the opportunities offered by distance education in

combination with modern media networks have been fully realized. But all these projects will stand or fall depending on whether adequate tutors can be found in time. In short, we must succeed in educating qualified personnel in adult learning techniques to fill these key positions; this can again be done with the aid of the new media. These adult educators must be given the tools to be able to give the necessary assistance to adult learners without destroying the concept of open learning.

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ADULT LEARNING
IN THE
CONTEXT OF DEVELOPMENT
(The Indian Experience)

Jan R. Bakemulder

1. THEORETICAL BACKGROUND

1.1. INTRODUCTION

It is a well-known fact that about 50 per cent of the people in the so-called Third World Countries are living below the poverty line: in figures this means spending less than US $ 75,-- per capita per year. If, however, we list basic needs, such as:

- protection against hunger and thirst, this means sufficient food and clean water;
- protection against climatological influences, which means clothing and housing;
- protection against illnesses, which means medical care and healthy surroundings;
- protection against ignorance, which means educational opportunities,

that involves a per capita annual amount of US $ 120,--. In this context some 70 per cent of the population of these countries lives below the minimum needs line.

These are flat figures only, but in practical terms it means hunger, malnutrition, illiteracy, low life expectancy, poor housing, dirty water supply, limited or no medical care, etc. But above all: NO HOPE for a better future for the people themselves and their children. Especially this "NO HOPE phenomenon" seems to me a crucial point. I have seen that in the African Countries South of Sahara: after independence there was a lot of hope for a better future with all the "elan vital" arousing from that feeling of hope. But after about two decades of independence people in those countries were confronted with reality: e.g. bad governments, population explosion, production going down and prices going up, national (tribalism) and international tensions.

The largest number of the very poor, however, live in Asia, particularly in Bangladesh, India, Indonesia, and Pakistan. Coming from a member State of the European Community I suppose that internationally we have to deal with a better distribution of resources: see the EC over-production of milk and butter, meat and other food products. But also nationally I think that the various countries have to deal with the problem of insufficient distribution, because this seems to be even a more distorting factor than absolute poverty.

Attempts to deal with poverty through programmes are necessary but not sufficient. In rural areas special programmes have been devised to assist small farmers through promoting production activities directed to their abundant labour and limited land they can develop and through inducing institutions such as rural banks, cooperatives and farmers service societies. In a number of countries the creation of large and medium size farms on which small farmers can be employed are facilitated, accepting the proletarisation of agriculture as a historical necessity.

Experiences in e.g. Kenya (the Africanisation of the large English settlers' farms) and Tanzania (socialisation of farms and villages) have shown results which are not encouraging, because of a production decrease of 10 to 30 per cent! Just to hand over the large farms and other facilities have shown especially in Africa disasterous results where production is concerned.

But without the dialogical aspect of development, it seems to be clear that the land base of small farmers could be strengthened through the provision of suitable technologies and organisational structures which provide better management and shared cooperative risks for animal husbandry and agricultural occupations. But as I stated before in a few African examples, the results in lifting the farmer above his poverty level have been limited because all programmes function within the existing rural structures which are favouring the large farms. They are not aiming at removing the basic constraints which prevent participation of the small farmer in the development process.

It is generally accepted as a fact that one of the basic reasons which prevent the participation of the rural poor in the development process is apathy. This is the "no hope phenomenon" which I mentioned in the beginning and that resulted in a low level "Need of Achievement", as McClelland calls it. It is believed, however, that adult education can almost always be an important tool in raising people above the feeling of apathy. Those concerned with rural development efforts also accept the fact that adult education can never remain neutral about issues of development which are related to the political and social situation in the country in general or in the area in particular.

1.2. CONCEPTS OF DEVELOPMENT

1.2.1. Concepts of Development.

There is a number of types of concepts, related to practices such as functional literacy, non-formal education, spare time adult education, half-work and half-study programmes, young teaching the elder to read and the elder teaching the young people technical skills, developing rural areas in an integrated manner, and other fascinating dimensions of educational processes for human and social development.

A United Nations report elaborates upon the concept of development from micro as well as from macro level point of view. In the report is stressed the fact that we need to clarify the purpose of development after which many confusing and complex issues become more clear. Of the items mentioned in the report I would like to list the following: questions about energy, environment, pollution, technology, patterns of consumption, urbanisation, the relation between agriculture and industry, international trade and regional integration, domination and dependence within and between countries, etc. The answers on these questions can be given more easily if we know where we want to go. We need to have the basic objectives in mind.

At this stage I would like to make a comparison with educating and bringing-up the individual. It has f.i. been the Dutch pedagogist Langeveld who stressed the fact that the educator needed to always have in mind the general purpose of his education. And for him the purpose was "Independent self-determination." And we can list many many slogans for the general aim of bringing-up, such as "Education to love (Spranger),

"Education to an all-round development of personality" (Koroljow and Gmurman), "Education to self-reliance (Adorno, Nyerere), "Education to Peace (Troger), "Education to socialism" (Bech), etc. The most beautiful is my opinion is the description of bringing-up by Kohnstamm: "to assist a human being to reach the highest possible inner peace without troubling others or depending on others." In the same way we need a general concept for the development of the individual we need it for a society.

We can introduce here the concept of "Totality", or in other words of "Gestalt" or "Ganzheit" in German, or in an even more modern slogan "holistic approach", which is essential for the individual person as well as for the community. Ganzheits- or Holistic Education seeks to develop the whole person - "mind, body, spirit, and social responsibility." I think this modern view is expressed in an educational law in The Netherlands: "By learning suitable and useful capabilities school education has to contribute to the development of the intellectual functions of the children, to their bodily excercise and to their training of all christian and social qualities." Let we as educators demonstrate some self-critiscism here, because this in modern terms "holistic sounding" educational aim is from the year 1920! And as a side-step I would like you to think about the thesis that in the last 60 to 70 years we have not developed our educational system as dramatically as technology has developed and as our "Umwelt", surrounding has been changing. And I leave it to philosophers to think about the thesis that "we are sitting here with a nuclear bomb in our hands, but with the same instincts of human beings from the Stone Age." (Kierkegaard)

Whatever the case may be the situation is becoming more and more critical and we need now to implement the beautiful ideas we find in the last decades in our books. Consequently, we have to combine theory and praxis, and that means for the individual that we need to change the educational system so that more than job skills and academic content are stressed: intuitive and imaginative faculties, knowledge and skills to social and political issues, ecological awareness, self-esteem, empathy, social and personal responsibility are some of the values which modern educators believe should be inculcated in students by the educational process. Communication, creativity, honesty, emotional expression, experiential learning, and group process are other characteristics and processes held in esteem by what we call holistic educators.

And in my opinion this also is of value for the community as a whole. This means that development is <u>not</u> about index numbers of national income and the growth of it; it is <u>not</u> about national production and capital coefficients. But development is about human beings. Consequently, it must begin by identifying <u>human needs</u>. The objectives of development are to raise the level of living of the masses of the people and to provide all human beings with the opportunity to develop their potential.

From this overall aim we can analyse a number of needs such as employment, medical services, transport and a higher general level of income. But it also includes meeting non-material needs like the desire for self-determination, self-reliance, political freedom and security, participation in making decisions, national and cultural identity and a sense of purpose in life and work.

1.3. LESSONS FROM PEDAGOGICS

Based on Flitner's theory on education (*) we can say that development and education are interrelated and interdependent and both are based on the philosophy of Man. We can distinguish the following basic philosophies:

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* W. Flitner: Allgemeine Padagogik

a. **The Biological view:** man as a being of nature, growing and developing following the laws of evaluation, whose behaviour depends on instincts and drives. For his biological well-being man needs exercise of his functions and more directly food, water, cover against climatical influences, etc. One sub-division is the **Anthropobiological view** which gives more distinction from animals. On top of the completely biological needs as described before, one has here as important elements: learning of symbols (language) and learning of social structures.

b. **The Historical-Social view:** which stresses the influences of society and this creates the problem of being part of such a tradition or to combat the tradition in order to work towards changing the existing social order.

Both above mentioned views are exponents of existence-as-such; but the following philosophies can be looked upon as the placing of Man on a higher level of existence.

c. **The Idealistic view:** in which education and development are seen as realisation of ideas (Plato) or virtues such as good thinking, will power, justice, etc.

d. **The Personalistic view:** human being in relation with higher consciousness, such as God, Cosmos, Universe, depending on religious-philosophical direction. This is the spiritual level of development.

We can consider these philosophical theories as the various levels of persons and of societies, which are - as said before - interrelated and interdependent. And at the various levels we find all needs of human beings from food as such to spiritual "food." A development strategy guided by the goal of meeting human needs everywhere, in poor as well as in rich countries, leads to a different composition of products and techniques so that a simple transferrence from those used in industrialised countries does not work.

1.4. ASPECTS OF DEVELOPMENT

Costa (*) lists the following essential aspects of Development to which I give examples of the bad and good strategies I have seen in the field, both used by International and Bilateral organisations, as by myself!

a. Development must be **total.** I would say that based on what I mentioned about Flitner, all dimensions have to be included. It has to transcend purely economic dimensions in order to include social aspects as food, health, living conditions and employment, but also the entire dimension of cultural and spiritual self-realisation embracing creativity, quality of life and the rights of man.

Especially in the beginning of development cooperation the donors selected a prestiguous project, without thinking to place it in the totality of the development of the country.

We know already for a long time from findings of Gestaltpsychology that the "total", the "Gestalt", is more than the sum of the component parts, and that the Total exists before the component parts. We have failed, however, to put this into practice in development policy. Today I think we could say that we need holistic development strategies, that means to seek to develop in the community the minds, the bodies, the total spirit and social responsibility.

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* Costa, J.F.: Twelve "Musts" of Development (Courier No 26), Asian South Pacific Bureau of Adult Education, December 1982.

b. Development has to be **original**, which means that imitation of models is undesirable. This means that strategies and content of development should be in accordance with the objectives of each country and the way it perceives its own future.
Starting with my UNESCO assignment in Kenya I remember that my Kenyan counterparts once in a while were really impressed by my plans and ideas of which they said: "Jan, it is phantastic and we certainly think it will work perfectly in Amsterdam, but not in Nairobi, Kisumu, or Mombasa."
In this context I would like to remind a saying of Lao-Tse:

Go to the people
Learn from them
Live with them
Start with what they know
Build with what they have.

And this is what we try to introduce in our Indian projects: the Indian student-experts have to live in the villages, when they are going to assist in adult education projects.

c. Development must be **self-determined.** This applies to the capacity for selecting a development style and it also must ensure its application in order to reduce dependency and vulnerability.
There are of course many examples of ridiculous items in curricula developed during colonial times. I found in the Kenyan desert province a lesson on Health Education, where was stated that the children should wash themselves with water at least two times a day. And that in an area where you only find the muddy water of Lake Rudolf at a distance of at least one hunderd miles. Dutch teachers have been teaching for ages children in Indonesia and the islands in the Caribbean about windmills, snow and ice; everybody all over the world seems to know the story of a Dutch boy, called Hans van de Brink, who saved the country by putting his thumb in a hole in the dike. English teachers were busy to teach children in the colonies all over the world the names of the wives of Henry VIII. And all of them failed to make children acquainted with their own environment.
In East African countries I was involved in a complete curriculum change. Schoolsupervisors organised meetings with teachers and parents all over the country. They gave their opinion on the content of the new curriculum. And this has been a very useful excercise. We found that we even needed different curricula in various parts of the country: city and rural areas; desert and bush areas; etc.

d. Development must be **self-generated.** At one side the spirit has to come from the people of an area, province or country as such. On the other side self-reliance cannot be achieved by local or national effort alone. This means that on the other side it has to be incorporated within a broader framework and that cooperation is vital for development.
Involvement of parents made it possible to build hundreds of schools and many teachers houses by providing only the most necessary building materials. Especially when we started training teachers by correspodence and radio: we had to reach around 30,000 teachers, but we found that more than two millions of people were listening to the radio lessons. This made the parents much more eager to get education for their children. We had here a most remarkable example of the modern didactical principle of parent participation. And the school attendance percentage increased tremendously.

e. Development must be **integrated.** A one-sided growth in a few sectors does not correspond to real development. Strong horizontal and vertical linkages must bind together the several productive units.
A Western Foreign Aid Ministry provided a few expensive and brand new fishing trawlers to Kerala, the Southern province of India. Nett result has been that thousands of fishermen with their primitive methods of catching fish are jobless now.

f. Development must **respect the integrity of the environment.** This means that natural, cultural and even traditional structures have to be respected which are necessary for the country's social cohesion and national heritage. This gives protection against all forms of imposed alien values.
One has to make use of tradition and of living conditions in a particular area. After a few weeks of working in the Ministry of Education in Nairobi, Kenya, a sheik Ahmed from the North Eastern Province came to my office. He asked me to advise him om the education of his son. "Shall I send him to school?" Being fresh from The Netherlands of course I answered: "Yes!" Years afterwards I visited that area and I met Scheik Ahmed. He pushed a boy to me and said: "You advised me to send my son to school. Now he is useless: he cannot look after my camels, my goats, nothing. Here, take him!"
It is, however, always a difficult decision how far as a foreigner you can follow certain traditions you do not agree with. In India for instance the protection of the Holy River Ganges; but many Indians will agree with you in thinking what is holy about a completely polluted river. Another tradional custom is the dowry system; it has been abolished by the government but it is still alive and will be alive for decades. These are just a few of the many examples where you as a foreigner clash with the existing traditions.

g. Development must be **planned** carefully and requires constant attention from and intervention by national and local authorities. This does not mean the exclusion of private interest. It has to be a cooperative effort of authorities and private business in order to prevent that there is a concentration and polarisation of capabilities and benefits in already highly developed areas.
From the various development cooperative strategies I myself liked very much a programme I introduced under the name:"Technical Cooperation and Institutional linkages." (@) Based on the ideas of McClelland (*) I tried to combine forces of two or three distance institutions in different parts of the world to cooperate especially in the development of distance education: exchange of personnel, experience, courses, staff training facilities, etc.

h. Development must be directed towards a **just and equitable social order** This requires structural transformations allowing for the participation by all sectors of the population in the benefits of science and technology.
Here I will take India as an example. You'll find here extremely rich people, such as the landowners, the new captains of industry and the movie stars. They are unbelievably rich because they are not bothered by the tax systems as rich peaple are in the Western world. On the other side you'll find the more than 500 million people, the in former times called "untouchables", who are living in the most disgraceful circumstances. Ian Myrdal, the famous Swedish anthropologist, is of the opinion that following the example of China also for India the system of the casts only can be removed by a revolution.

@ Jan R.Hakemulder: UNECADE, Some Thoughts on Distance Education. (Addis Ababa, 1978)

30 * David C. McClelland: The Achieving Society (1961)

i. Development must be **democratic.** This means that it must respond to the choices made by the population as a whole. We must reject the idea that technological decisions are dictated by an internal scientific and technological complex. This involves nothing less than the freedom of mankind to determine its own destiny.
Here I would like to mention the bad position of women in so many countries. Obvious this is the case in quite a few Arab states, not the least in Iran. In India I was quite happy to see so many female students at several universities. But the position of women in the villages in many parts of the country is not yet so that we can talk about equal rights. In our educational programmes we stress this equal rights principle, first as a human rights principle, and next, because in my opinion to educate a women is to educate a family. In the Indian villages where we run our educational programmes I was very eager to be informed about the village schools. I was very disappointed to find that only 25 to 30 per cent of the children is going to school. In my home country we have a saying: "That is mopping with an open tap." The drop-outs of today are the illiterates of tomorrow. It has been my experience in Egypt - where we educated by radio one and a half million house wives - that the school attendance is growing dramatically. The conclusion is that education of women has its importance in itself, but also a very positive side effect for the family as a whole.

j. Development must **not insulate less developed countries or regions,** but has to be regarded as a phenomenon of the world as a whole.
Because of the fact that development efforts especially in Africa have not been that successful, one can imagine that it is tempting to select the more successful countries for development cooperation. May be that cooperation with private businesses and organisations needs to do that; but I think that especially bilateral and multilateral organisations have to concentrate on the very poor countries.

k. Development must be **innovative.** It must not depend on the importation of outmoded technologies from the industrialised countries. Furthermore it has to be creative.
One of the problems with correspondence courses is, that one has to rely on the mailing system . In one of the Latin American countries therefore we started with courses for the Postal Services. In Uganda we found that we could not trust the mailing system, but the news paper was everywhere in the country. Consequently we hired a page in the newspaper to reach our teachers. The side effect was, that also other people got this information and learned from it. In the desert area of Kenya I had trouble to get my courses to the Headmasters. But Coca Cola was brought to any place. A deal with this multinational made it possible for us to get our courses up and down from headquarters to the students!

l. Development planning must be based on a realistic definition of **national needs** and on the consumption models that are consistent with the **national characteristics of a country.** See for yourself the United Nations buildings in Addis Ababa: if something is wrong with the elevators, technicians from Italy have to come; if something is wrong with the air conditioning system, American technicians have to come. And that in a country with enough space for low buildings, and where you do not need airconditioning at all!

See ANNEX: Two Development Strategies

One needs I presume a philosopher and spiritual leader to ensure that most of the above mentioned "musts" are put into practice. Gandhi introduced as early as 1925 one of the most dynamic programmes called "Basic Education", which in a way reflects present day's non-formal education. Gandhi emphasised that the system of education for the rural areas should be different from that of urban areas and emphasis should be not only on intellectual subjects, but on the specific function of individual skills.

In our Indian projects we have tried to include as much as possible the ideas and principles I have mentioned above. We find today the idea of "Development Education". I found a good description of Development Education is a paper of Dr. Devanesan, who states that "Development Education is based on the recognition that ultimately the greatest resources a country possesses are in its people when they become, not just productive, but creative and motivated by those self-effacing values taught by sages and seers, rishis and sadhus, mullahs and christian saints down the ages, sustaining and enabling men and women through all ups and downs of the study of humanity."

Development education is directed to the entire man, the whole personality of men and women and it is concerned with development of people both individually and collectively. It means enabling every individual but especially the poor man to understand the milieu in which he lives. The poor need to know why they are poor and the causes of their poverty. It should enable them to liberate themselves from their "culture of silence", as Paulo Freire described it, by learning to assert their rights both natural and legal, equitable and constitutional.

But development education must do more than just to show people why they are poor. It must also enable them to participate actively in bringing about change and transformation in society. The lack of response and participation by the people has been one of the cardinal reasons for the failure of many schemes for development. People are unprepared and not motivated for change, and above all not enabled to participate themselves in bringing about change. Eevery development project and programme needs a built-in sense of what it seeks to achieve in human terms of both justice and mutual understanding.

1.5. AN ALTERNATE STRATEGY: DEVELOPMENT LITERACY_

After conceptional analysis of the several types of adult education strategies at global and national levels brought Dr. Jayagopal, Professor and Head of the Department of Adult and Continuing Education, University of Madras, India, to introduce the concept of Development Literacy. The structure of the various models and strategies reveal several factors accounting for success or failure. Most of the times failure is related to adult education programmes, where no development aspect has been included. (*) Therefore Jayagopal desires that the term Development Literacy needs to be used in future to denote all development which carries deliberate strategies of adult education, including literacy, awareness and functionality.

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* An example of a "successful surgery and the passing-away of the patient" seems to be a litaracy project in Upper Egypt where we were successful to teach by radio and animators 1 1/2 million women how to read and write. But because of not being integrated in a complete development concept and because of political problems there was no follow-up and the skills of the housewives "passed away."

Due to its community-oriented and prospective approach, and built-in motivational aspects of cognitive and affective elements, the "Development Literacy Approach" has compomised many of the draw backs observed in the so-called functional literacy programmes. Another advantage is that the Development Literacy methodology could be duplicated easily at any place.
In the Development Literacy Approach "Development" and "Literacy" should go hand in hand, to sustain the growth of the individual and the community at large. More particularly this will be the case, if the inputs are introduced into the "receiving system" (that means the individual or the community) in a hierarchical fashion, when they move from dependent type behaviour to independent and interdependent behavior (self-reliance and mutual reliance) during the course of learning activities. Development is "rationalisation", "realisation", "participation", "actualisation" and a concern for the individual and the community. In this context Maslow has developed an interesting frame-work, which helps to explain the concept of a certain hierarchy of human needs, which can be regarded as the conceptual frame of Development Literacy. According to Maslow (*) there seems to be a hierarchy into which human needs arrange themselves and they are termed as psychological safety and social safety (respectively security and affiliation), esteem (recognition) and self-actualisation. Applying this major logic of "hierarchy of needs" it can be stated that a community or an individual while developing has to pass through similar stages of growth and development. And as I have stated in the beginning, while making comparisons with Flitner and others, this also is to some extent parralel to the phenomenon of human growth and development.
It is a popular assumption that people learn accidentally, and probably 80 per cent of learning can be accounted for as accidental learning. In a community where chances exist for more accidental learning development of the individual and the community will proceed smoothly. The sequence of inputs of Development Literacy Approach aims to providing opportunities for planned and accidental learning <u>for</u> members of the community <u>by</u> members of the community. The approach purports development of a specific rural community through certain learning webs, utilising several alternative educational processes in a hierarchical manner lodged in the delivery system. The principles of integration of several psycho/socio/economic inputs in a flexible manner form the matrix of Development Literacy Approach in a community.
For the purpose of operationalising the concept of Development Literacy certain pre-conditions have to be met. The chosen area for introducing the particular project should meet the criteria weaker section and economic backwardness. During the first stage mobilisation of leadership within the chosen community has to be achieved through dialogical process. This also means, age group categorisation, developing andragogies and other action-oriented projects towards need fulfilment of the target population.
In assessing human resources it is worthwhile to remember that it is the <u>whole person</u>, who is the key resource and not merely his/her specialised skills, knowledge or capabilities. Hence resource assessment would include a complete psychological or personality profile as well as the social network of the group relations. Skills, knowledge and capabilities are important but only as part of the full personality. If the initiative of the outsider is greater than that of the community then the latter becomes a passive recipient of inputs and participation of the community is repressed. Consequently, the initiative of the people must remain ahead of the change agents, ultimately leading to taking over its own development.

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* Maslow, A.M.: Motivation and Personality. New York, 1954.
Maslow, A.M.: Some Educational Implications of the Humanistic Psychologies. (1968)

2. PRAXIS: THE MADRAS PROJECT

(Persons professionally interested in this project I would like to refer to the complete project document).

2.1. INTRODUCTORY REMARKS

Communication is important to achieving conscientisation, organisation, politisation and technification. In many developing countries mass media are used to stimulate these processes to individual learners and to learners organised in forums. The educational strategy we have used and which is based on principles mentioned before is called "participatory communication." This means that people have more access to communication media, not only as receivers, but as sources and actors as well.

Two-way communication is extremely important in the multi-media approach: therefore moderators (animators, teachers) are used to function as a link between communicator and the receiving forum.

Systematic research in this field is very much needed in developing countries in order to get the most efficient and attractive alternative to traditional communication models. This project intends to contribute to the construction of such a methodology by way of a field-experiment. The findings are meant to be relevant to the Indian situation, but should also be of great value to other developing nations.

2.2. EXPERIENCES OF MADRAS UNIVERSITY IN PARTICIPATORY COMMUNICATION

a. The "Literacy through Television" Project.

The Department of Adult and Continuing Education of the Madras University has been involved in a project to telecast a functional literacy programme to a rural audience. This project was based on the strategy of multi-media participatory communication, and attempts to establish effective two-way communication between the educators and the target-group of illiterate adults. There were three components, namely: a. Awareness; b. Vocational Skills; c. Literacy.

The most significant results of the experiment were:

a) The interest of the learners was enhanced by their participation in decision making;
b) The response percentage was relatively low in the case of one-way communication. Two-way communication, facilitated by a trained animator, resulted in much higher response percentages;
c) Other factors shown to have had a positive influence on response percentages were: dramatising, improved methods of literacy teaching; the mean season;
d) Learners organised in forums showed greater increases in knowledge than illiterate adults inhabiting the non-forum control villages.

Related Research Findings.

Other research findings concerning media forums in developing countries tend to support these conclusions. The following reasons for the success of media forums can be listed:

a) Interest in participation is heightened by group pressure;
b) Attitude change appears to be more readily achieved when learners are organised in groups;
c) Feedback to communicators from the forums is rather immediate.

b. Proposal for a Multi-Media Research Project

The research findings mentioned above do not account statistically for the variations in learning due to the utilisation of various media or combinations thereof. We should capitalise on the results of correlation studies, and move forward in a series of carefully designed and conducted field experiments, in which the various types of communication channels will be the independent variables.

Objectives: The project wants to contribute to the development of a methodology of participatory communication. From this we can even develop guidelines for the implementation of multi-media projects in India as a whole and other developing countries.

After that project researchers will be able to determine the impact of different media (i.e., television, animators, radio)

Design: The study will concern 11 literacy centres in 12 villages in the district of Chingleput in Tamilnadu State (Southern India). We are going to make use of:

A. Animator forums: Animators are trained persons, and in these forums they are making use of written materials and pictorial materials;

B. Television forums: making use of specially designed television programmes;

C. Radio forums: Making use of radio programmes. (those programmes are specially designed by and for the project).

Composition of the experiment villages:

- 3 villages: individual media only (A, B, and C).
- 3 villages: different combinations of two media (non-integrated approach: A-B, A-C, and B-C)
- 1 village : combination of three media (non-integrated approach: A-B-C)
- 4 villages: different combinations of 2 or 3 media (integrated programmes: AB, AC, CB, and ABC)
- 1 village : will function as a control village

Research Instruments: A structured interview schedule, containing subdivisions on:

sex / age / position in household / household composition / ethnic background / socio-economic status / education, etc.

A structured interview schedule, dealing with knowledge / attitudes, etc.

c. **Own Observations during Mission to Madras, Tamil Nadu.** (*)

A small preliminary project had been carried out before the main project will start. Because of lack of funds the programme had to be stopped, but it has been an advantage to visit the research institute and a number of the selected villages.

The Department of Adult- and Continuing Education, University of Madras.

It has been made very clear that the staff of the Department, such as professors, research scholars and students, has a high scientific quality. But even more important seems to be that under the stimulating guidance and supervision of the Director of the Department there is an atmosphere of cooperation and the motivation to start with the work on this particular project is high. The scientific background for the project has been laid down in a very impressive book. (@)

The Selected Villages.

A number of the selected villages was visited. The first thing that struck me was the cleanliness of the huts and compounds, this in comparison with villages I have visited in many other developing countries. Secondly, I was surprised to find out that the population - the so-called "Untouchables" - is very free in its reactions. On the other hand I experienced that it was extremely important for the kids to be "touched": dancing children were really pushed forward to me by their parents to shake hands!

In direct relation with the project, however, it was more important to figure out how people had liked the limited programme, that had been carried out. In one word: they were ENTHUSIAST!!! Most of the programmes were quite well remembered. In one of the villages a group of women was mentioning programmes concerning alcoholism: "Only one man in our village is still an alcoholic, but he is hopeless anyway; but by other people alcohol has been abolished!"

Of course, a one-day's visit to each of the villages could not provide me with complete and scientific data. But on the other hand I think that nearly twenty years of experience with problems in developing countries may have given me some "Fingerspitzen Gefuhl" (sensibility) to come to the conclusion that the programmes had been extremely successful. The people in the villages were really pleading that the educational programmes would continue.

From my observations in India I would like to raise a few other points.

2.3. RETAILING SYSTEM

The retailing system is a well-known economic principle, that has had far reaching consequences in developing countries. One can buy for instance one cigaret or two bananas, all in accordance with the needs at that moment and particularly with the amount of money one can afford.

Mrs. Fay Hakemulder: Indian Mission Report. (ECUTAF, 1986)
Professor R. Jayagopal: Adult Education, A Psycho-Social Analysis in the Indian Context. (Madras, 1985).

It seems to me that the retailing system is a good example for the educational praxis in general and for that in developing countries in particular. It is for men and women in the villages and slums in India not always possible to spend so much time on education. Many of them have to go to work, or anyhow to find something to survive. Furthermore, the very poor do not always have sufficient physical strength left to study at the end of a long and hot working day.

I would like to give an example from Ethiopia. For an outsider it is an easy thing to say that in farming it is much better and effective no longer to use the hoe, but start using the shovel. For people in industrialised countries it is just a minor change. But in Ethiopia we encounter a few difficulties.

The use of a hoe is much easier; one scratches only the surface of the soil and therefore it does not take too much energy. Using more energy by changing to the shovel asks for more food, and that is not available.

Furthermore in Ethiopia there are two major religious groups. The Moslims have their fasting periods (Ramadan), and during quite some time they are not allowed to eat during daytime. The Orthodox Christians have around 160 days of fasting and during those periods they are not allowed to take any food coming from animals: no meat, no eggs, no milk, etc. These fasting periods are times of less food, that means less energy for work.

This example shows, that even a small change from hoe to shovel already creates problems.

Lack of time and energy may hamper for many people the success in education. Consequently, the "Educational Re-tailing System" may work: offer small parts of courses, so that even people with very limited time and possibilities may succeed to reach a certain level in "cope-ability." In comparison with the retailing system in economy, this system introduced in education may bring the content of courses within the reach of many more people.

2.4. TRAINING OF ADULT EDUCATORS

The weakness in most distance institutions in the developing world is the training of distance educators themselves. After an overall research in the 51 member States of the UN Economic Commission for Africa I came to the conclusion that especially training of course writers was urgently needed. To train in a relatively short time and at low costs a high number of course writers, the Educational and Cultural task Forces (ECUTAF) - a private consultancy firm - developed a Correspondence Course for Correspondence Course Writers. (*)

This course has the following advantages:
- it matches the principles of distance education;
- it is a model course in itself;
- the educator finds out what it really means to be a distance student;
- it is on-the-job training;
- it is cost-effective.

The same strategy can be used to train the animators for the Madras Project. Consequently, another outcome of the preliminary project has to be to develop a specific training course for animators in the form of a distance course.

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* Jan R. Hakemulder: "Getting the Message Across." (1980)

2.5. EQUIPMENT

In relation with our philosophy of people and communities who after some time start to develop themselves, another result of the project and of our experiences has been: to provide simple video equipment to communities which is used by the people themselves.

In the bottom-up approach fits the idea that in stead of spending lots of funds on high-tech sophisticated equipment it seems to be much better to supply simple low-cost equipment, which can be used by the animators in the villages.

As follow-up of the project has to be included:

a. Video equipment such as cameras and recorders; the choice of equipment depends on possibilities for maintainance in India;

b. Training of a small team of students from the Department of Adult- and Continuing Education of the Madras University in video film production.

The main principle behind this project is that people themselves will be able through this equipment to explore their surroundings by making films. And by the exchange of films between various communities will spread ideas and plans to others.

3. FUTURE PROSPECTS OF THE INDIAN PROJECT.

The before mentioned project is in the first place a research project, aiming at developing the most effective and efficient educational methodology for people in rural and urban areas in developing countries.

But already now, even before the main project has been ended, the plans are being developed to expand the Adult Educational Project to around 3,000 villages in the province and after that to all villages in Tamil Nadu, a province with a population of about 55 million. On the long run we are even preparing to start similar projects in other parts of India and even in neighbouring countries. Consequently, to guarantee the start and continuation of similar development projects we have to begin in an early stage to

a. select new areas in Southern Asia;

b. prepare the necessary project documents and get them accepted by the administrations of the respective universities, local and central governments;

c. get the project accepted and financed by Donor Organisations;

d. selection of equipment.

Educational and Cultural Task Forces (ECUTAF) of which I have talked before and which I am representing here is a small consultancy foundation. The advantage is that we are flexible in our operations, making use of the expertise of specialists in all parts of the world. In connection with the project in India we will be happy with any idea, assistance, cooperation, expertise, finance and equipment in relation with our activities.

ANNEX I

TWO DEVELOPMENT STRATEGIES

ASPECT:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Idea about the target group	People are lacking means and possibilities to develop	People are able to self-development if they get organised
Motive for cooperation	They need help and assistance	People only need opportunities for self-development
Idea about knowledge	Western knowledge is superior	Traditional knowledge is relevant for surviving and development
Educational relation	Teacher-student relation	Everybody is teacher as well as student, and can make contributions
Attitude	Paternalistic	We are all adults
Aim of development workers	To realise the project plan	To develop a combined vision and plan
Perspective of time	Short-term	Long-term
Approach of problems	Problem solving	To put questions
Work attitude	To fulfil tasks	To listen and analyse the information
Centre of change	The development worker	The people
Change is looked upon as:	Improvement	Transformation
People are considered as:	Objects	Subjects
Participation is felt as:	Means to reach the goals	As a goal in itself
Organisational structure	Hierarchic, vertical	Cooperative, horizontal
Type of organisation	Formal	Continuous movement
Type of work	Technical-economical	Educational-organisational
Criteria	Productivity and economical growth	Criteria of living conditions by the people themselves
Leadership	Project leader	Project coordinator

Sexual participation	Male domination	Men and women work together
Qualities of the leader	Is able to take decisions	Is able to leave decisions to other people
Relation to colleagues	Expert-counterpart Authoritarian	Shared partnership No authority
As soon as leader is not there	Activities slow down	Activities continue
Type of solutions	Fight against symptoms	To attack basic causes on a structural way
Type of communication	Monologue	Dialogue
Direction of ideas and information	Top-down	Two-way: Top-down and bottom-up
Planning	Plan of operations	Open process-approach
Initiative to evaluation	By donor organisation	By the people

ANNEX II

SHARING WISDOM

Using videotape, people in many isolated villages are being given the opportunity to share in problem solving

Imagine a small village in Mali - dusty, dry, isolated, and poor. There is no electricity, no running water. The people are farmers, eking out a meagre subsistence from the arid soil. On this particular morning, two women stand in front of a mud-brick house pounding millet, their bodies wrapped in brightly coloured cotton sarongs. Their babies sleep in slings of cloth on their backs.

Another woman from the village sits on the ground between them, listening as they discuss local problems. She is dressed similarly, and is also barefoot. But one thing about her is different: she has a video camera on her shoulder.

Nearby in another village women are working with sound equipment. They are taping conversations - about the problems of good soil that is being overworked and turning into dust; about the desert that is gradualy creeping into their lands; and about ways to conserve fuelwood and plant new trees. When finished, the tape will be sent to other villages in the developing world, and to international agencies in the industrialised world.

These women are members of a unique communications organisation: Village Video Network. Since the mid-1970's, scenes like this have been taking place in a growing number of developing countries. Local people - often illiterate - have been learning a communications skill that enables them to share ideas with others in similar situations.

The information exchanged on these video-tapes often leads to practical solutions to problems ranging from overpopulation to energy shortages to basic health and nutrition needs. And the knowledge gained gives participants an unusually rich opportunity to exercise control over their own lives.

A major obstacle to development efforts, most observers agree, is poor communication between the providers and the recipients of aid. No matter how eager foreign experts may be to understand, the realities of the village life are not easily conveyed in reports they write. Most development planners work from data culled by foreigners visiting the developing world - second- or third-hand accounts which rarely present life's true intricacies.

Foreign - often Western- experts are also usually the communicators of development strategies to the villagers themselves. But their inability to communicate relevant ideas effectively is greatly impaired by their very foreignness. And if their message does get through, their work may foster dependence on outsiders, rather than self-reliance, on the part of the people involved. Moreover, the people at whom development schemes are aimed almost never have an opportunity to express their views and concerns to anyone outside their immediate community.

"It is my experience," wrote Martha Stuart, founder of the Village Video Network (VVN), "that villagers doing family planning work in Jamaica and Egypt have much more to learn from each other than either can learn from what filters down to them from their respective national governments or from international agencies." Martha Stuart, who died in 1985, wanted to listen to those who were being talked a b o u t and give them the opportunity to share their views with others, rather than always having professionals analysing people's experiences.

With its central office in New York, VVN consists of groups in Mali, Egypt, India, Jamaica, China, Guyana, Indonesia, Nigeria, Zimbabwe, a.o. which have been trained in video production techniques, and to whom video taping and sound equipment, as well as blank tapes have been supplied. Each time a group produces a tape, it sends a copy to the New York office, which then forwards a copy to other countries on a lending-library basis. Tapes are almost always made in the local language, but an additional sound track in another language can easily be provided by New York or local staff.

People on opposite sides of the globe can learn from each other's experiences by screening the tapes they borrow from VVN. A recent exchange between China and Guyana illustrates this point.

"We did a workshop in China where a group of villagers documented the ecological cycle of pig manure to biogas," says Barkley Stuart, son of Martha. "In the tape they give you a tour of their village and show the process of making biogas. And they show a demonstration of how clean the biogas is compared with the burning wood they used to use. As a result of this tape, people in Guyana who saw it made their own biogas digesters ....."

Video equipment is relatively light and easy to handle, providing much more mobility than would be possible with film equipment. It also offers the advantage of instant replay, with no time or money spent on developing film. Video cameras and sound equipment can be operated off a battery or generator.

It is our experience that you can't tape in a village without giving the people some feedback - and letting them see themselves. It is a big event; when you play the tape back you get the whole village there in no time.

As said before, the founder of the foundation was Martha Stuart. She had worked in television and radio since the 1950's. In 1965, she arranged a conference on birth control for Planned Parenthood of America, which resulted in a book "The Emerging Woman: the Impact of Family Planning." Martha Stuart began producing video documentaries in 1966.

In 1974, she went to Egypt to produce a video programme on family planning, consisting of a group discussion among village women. It was then that the idea came to her which provided the inspiration for the Village Video Network. Her son states: "It occured to her that what she was doing only served her purposes. She wanted other people to understand these villagers, yes. But she also wanted the villagers to have the same access to this communication medium as she did. Instead of only gathering information for international purposes, she decided to give the communications tools to the people themselves. So while she was there, she taught a group of people how to use the video equipment, and then she left it with them."

Those Egyptians were the first members of the Village Video Network. Later she started training groups in video production in other countries. According to Barkley Stuart, his mother felt "that we live in a world where politicians represent people, but the people's views are not necessarily the same as the politicians." When you use film or centralised television, you end up with controlled or managed information. But when private individuals learn to use video, information is no longer controlled by politicians. If you give the people, who are actually doing something, the tools for communication, you get more pure and emotionally true information. (*)

Since 1981, VVN has been affiliated with the United Nations University in Tokyo, which provided some of the funds that allow the network to supply its various branches with materials such as blank videotapes. Additional financing comes from the proceeds of the other activities of Martha Stuart Communications, such as selling to colleges, and libraries in the USA. Funding for training and equipment is also provided on a project-by-project basis.

One of the most significant aspects of the VVN is its committment to demonstrating that illiteracy is no barrier to effective communication. With a literacy rate of less than 50 per cent in many developing countries, Martha Stuart wanted to ensure that people, whether or not they could read or write, would be able to express themselves. What has been proven is that illiterates can learn to use very sophisticated technologies very effectively. This, however, does not mean that literacy programmes are not highly valued.

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* Jan R.Hakemulder: "Top-down and Bottom-up Approach." New Delhi, 1986.

One outstanding example of the illiterate programmes has been VVN's experience with a labour union for women in India's vast sector of undocumented workers. The Self-Employed Women's Association (SEWA) joined VVN after its director, Ela Bhatt, attended the first international VVN meeting in Bamako, Mali, in 1982. Since then, Video SEWA has trained about 20 of SEWA's members. Most of them are illiterate. SEWA's video producers and technicians are vegetable vendors, hand block printers, carpenters, cane workers, and junksmiths. Video SEWA has produced a large number of videotapes, which they are now selling to other organisations in India, as well as distributing to other countries through VVN. These tapes have ranged in subject-matter from trade techniques and nutrition to farming and family health.

Video has proved to be a very powerful medium. It seems to be possible that the people in the villages produce beautiful, and from educational point of view effective video films. The only thing needed is to make use of a network, to give a short training to the people and to provide them with the hard ware and soft ware.

A good example is Mali, where a group of women had been trained. Most of them were illiterate women. They had never seen even television, yet they are excellent in the production aspect. First of all they are very steady: strong shoulders. And they don't get distracted. They have good concentration. Then they have a good eye in the sense that they are able to perceive. Once they are clear about a subject, then they are very clear. They were producing f.i. a tape on diarrhea in a village. (Dehydration, resulting from diarrhea, is the major cause of infant and young child mortality in developing countries). They knew the situation so well. The way the camera moved: the drinking water facility, the pond where people wash, how dry the land is; then the kitchen and the pitcher where they put the water. Diarrhea was the subject, but they also shot the whole cause of diarrhea, which is water and the facilities and how dirty it all is.

One aspect of the VVN's work that surprises some observers is that in dry, dusty parts of the world illiterate villagers maintain video equipment in good condition, virtually indefinitely. There have been almost no incidents of damage to equipment anywhere. "The idea is that the people feel they "own" the equipment in a very special sense. Its use seems to have given them self-confidence and a sense of involvement in shaping their own lives.

Martha Stuart's vision for Village Video Network is perhaps best summed up in her own words: "By giving global reach and social import to this kind of personal exchange," she wrote, "to what is essentially people encouraging other people, I believe we can tap a pool of human energy and healing power of untold dimension. Once people move beyond a win/lose mentality, they are able to relate to each other on the basis of trust rather than fear..... For the first time we have the means in video technology truly to girdle the globe with examples of people helping each other. I find it hard to imagine a more powerful method for establishing world peace and supporting human health and growth everywhere. But it begins at village scale."

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PROJECT PROPOSAL

Study of the Impact of Multi-Media Forum on Adult Learning and Attitude at some of the Selected Villages in the District of Chingleput in Tamilnadu through Participatory Approach

OBJECTIVES AND DESIGN

Project Director
Dr. R. Jayagopal , M.A., M.Sc. (Indiana), Ph.D. (New Mexico)
Professor and Head

Joint Project Director
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AREA PROGRAMME

PROJECT FOR SOUTH-INDIA

TITLE	Study of the Impact of Multi-Media Forum on Adult Learning and Attitude at some of the Selected Villages in the District of Chingleput in Tamilnadu through Participatory Approach.
DURATION	Three years
SECTOR	Education and Training
GOVERNMENT CO-OPERATING AGENCIES	Department of Adult and Continuing Education University of Madras, India
EXECUTIVE AGENCY	Department of Adult and Continuing Education University of Madras, India
ASSOCIATED AGENCY	Educational and Cultural Task Forces De Hoarnen 5, Opeinde - The Netherlands
DATE OF SUBMISSION	1st of October, 1983
STARTING DATE	1st of June, 1984
INDIAN GOVTS CONTRIBUTIONS	None in cash
OVERSEAS CONTRIBUTIONS	US $ 82,889.—

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1. TITLE OF THE PROJECT

"Experimental study of the differential impact of the participatory approach in multi-media forums on adult knowledge and attitudes, at selected villages in the District of Chingleput in Tamilnadu State, India".

2. INTRODUCTION

Multi-media forums and the participatory approach to communication

Communication can, as is widely recognized, be an important means to achieving conscientization, organization, politicization and technification. Developing countries utilize mass media such as radio, television and print for delivering developmental educational messages intended to stimulate these processes, so important to social and economic development, to individual learners and to learners organized in forums.

All media and media forums generally have been shown to have been effective in raising knowledge levels, forming and changing attitudes and stimulating behavioural changes. In addition to its effectiveness, the utilization of media in education has enormous other advantages. Concerning India, Dewal (1982) has made clear that the constraints of limited resources and time, if not today then certainly tomorrow, will compel us to focus on designing open education teaching structures. This will, as envisioned by the Alberte Commission on Educational Planning, not necessitate the establishment of additional institutions of the conventional type: Radio and televison schools, for example, would be a viable and cost effective alternative system, utilizing optimally the available potential of the Indian National Satellite (INSAT). Only in this way could elementary education be universalized under the present resource constraints.

However, the opinion is gaining ground, that a prerequisite for the realization of the educational potential of the mass media is the development of a coherent communication philosophy and methodology acceptable to the beneficiaries (Bordenave, 1977). This principle is commonly called **"participatory communication"** . The term refers to efforts along several lines to grant people more access to communication media, not as receivers only, but as sources and actors as well. The target population of educational programmes, traditionally the passive receptables of information intended to be of benefit to them, are instead being actively involved in programme formulation, implementation and evaluation. In the two-way communication process thus effected, the audience and the communicator act on each other as equal partners in a joint undertaking (Pool & Schramm, 1959).

Bordenave (1977), reviewing the global situation of the role of communication in rural development, states that the gradual adoption of this new approach to communication is resulting in several significant innovations in rural development communication:

1. In programming, media are becoming more accessible to participation by the rural population;
2. Messages are originating from the rural population, and Government agents, technocrats and other members of the elites, previously acting as communication sources always, are learning to be receivers;
3. The content of messages is becoming more relevant to the problems and needs of the rural population;
4. Rural people are learning to formulate and bring forward their ideas and feelings about matters important to them;
5. Governments are learning to communicate less paternalistically and with less authoritarianism, facilitating a dialogue with the rural population;
6. New technologies, such as audio- and video-tape recording are enabling all parties in the dialogue to register messages and feedback, facilitating mutual understanding.

These trends would be most apparent in developments within the **"multi-media approach"** . This approach implies more than the restricted utilization of different media it is often understood. The judicious utilization of different media in concurrence with **moderators** (facilitators, animators, teachers) should be considered the multi-media approach. Moderators can function as an important link between communicator and the receiving forum, promoting communication both ways, and would therefore seem to be an essential component of participatory communication as well.

Yet, however significant the trends mentioned by Bordenave may be, it remains a fact that most communication models in use are still based on one-way transmission, and reveal a persuasive orientation. Moreover, only a few attempts have been made across the world to appraise scientifically the role of communication in facilitating the popular participation and action required for rural development (Schramm, 1973). The paucity of research is particularly glaring in the developing countries, where such research would seem to be most called for.

A coherent participatory communication methodology relevant to the socio-economic situation in the developing countries, will have to be based on systematic research undertaken in those countries in order to become a viable and attractive alternative to traditional communication models. Dealing with questions concerning the optimum combination of media, the role of the moderator, audience characteristics influencing performance, and the effectiveness of the various interaction methodologies, the present project intends to contribute to the construction of such a methodology by way of a field-experiment. The findings are meant to be relevant to the Indian situation in the first place, but should be of great significance to other developing nations as well, since the characteristics of underdevelopment, to the amelioration of which participatory communication means to contribute, are fundamentally similar all over the world.

The proposed project arises directly from the experience of the University of Madras in participatory communication and other scattered research findings relevant to the area in question. Before giving a detailed description of the objects and design of the present project, it is necessary to explain the experience it springs from.

3. THE UNIVERSITY OF MADRAS EXPERIENCE IN PARTICIPATORY COMMUNICATION AND RELATED RESEARCH FINDINGS

3.1. The "Literacy through Television" project

The department of Adult and Continuing Education of the University of Madras has been involved in a pioneering endeavour to telecast a functional literacy programme to an estimated rural audience of 1,500. The project called "Literacy through Television" was conceived as part of National Education Programme (NAEP) activities, initiated in October 1978. The project covers 200 villages in the Districts of Chingleput, South Arcot and North Arcot, which are within the 90 km. range of television coverage from Madras. (Nagarajam & Selvam, 1979)

The project is based on the philosophy of multimedia participatory communication, and attempts to establish effective two-way communication between the educators and the target-group of illiterate adults. All activities are designed to increase knowledge and to improve skills, and to create oportunities for self-fulfilment for those who have never attended school or who have left the formal educational system prematurely.

The telecast programme, called "Life Education" has been designed on the basis of survey findings from 169 villages. It consists of three components, namely: 1. **Awareness**; 2. **Vocational Skill**; 3. **Literacy**.

The first component aims at providing information concerning various perplexing issues one faces in one's family and community. The second component aims at improving occupational skills and scheduling skills, in order to increase economic opportunities. The third component includes the teaching of reading and writing as well as basic arithmatic.

The community television sets, provided by the State Government, were located in central places in the villages, either in the local school or in a "Panchayat" (county) office, in order to give all villagers the opportunity to watch the programme. Operators were nominated and entrusted with the responsibility of operating the television sets. Trained animators were assigned to a number of villages to facilitate the communication process.

With a view to pinpoint and to evaluate the merits and demerits of the project, a study of its operation and effects was included from the very beginning. The general objectives of this study were:

1. To determine to which degree television had served as an effective tool in rural communication;
2. To determine to which degree television could be used as a participatory medium of communication.

Specifically, the study was meant:

1. To determine the level of interest of the learners, as evidenced by their responses to the programme, and to find out whether a definite pattern of communication had emerged;
2. To determine the effects of one- and two-way communication between the senders of the messages (the communicators) and the receivers of the messages (the animators and learners);
3. To assess the effectiveness of the training of the animators by the communicators, and to establish the pattern of their response in the field.

Feedback consisted of information to the communicators provided by the animators or operators on the number of viewers participating in the programme, their main interests and needs, and their reaction to and comments on the broadcasts. In order to deal with the aforementioned issues, several variables were introduced into the project, resulting in 5 possible response patterns:

1. Response pattern when animators had not been trained;

2. Response pattern when animators had been trained, and no intimations prior to the broadcasts were being sent to the animators by the communicators;

3. Response pattern when animators had been trained and advance intimations were being forwarded;

4. Response pattern when animators had been trained and the frequency of the broadcasts was limited to once a week;

5. Response pattern when animators had been trained and the programme was being broadcast twice a week.

Within this framework the responses received from the animators from November 1978 to March 1979 have been thoroughly analysed. The most significant results of this experiment in communication are presented below:

1. The interest of the learners in the programme was enhanced by their participation in decision making. The study made clear that, when animators had been sensitized by a training programme and were able to articulate the reactions of the learners in their forums, the response percentage was comparatively high.

2. The response percentage was relatively low in the case of one-way communication. Two-way communication, on the other hand, facilitated by a trained animator, resulted in relatively high response percentages. One-way communication excluded any form of feed-back, and therefore the possibility of improving the original programme according to the wishes and needs of the learners.

3. Other factors shown to have had a positive influence on response percentages were: the favourable learning environment created by dramatizing information; the improved methods of literacy teaching practised in the project; the lean season.

Most important to the success of the project, however, were shown to be the establishment of two-way communication and the training imparted to the animators. The animators' role was shown to be of crucial importance to the participatory process, as they were able to bridge the gap between the communicators and the learners, and could function as channels for feedback. The training programme has enabled them to work in rapport with the learners, and to identify their needs and interests successfully.

4. Learners organized in forums showed greater increases in knowledge than illiterate adults inhabiting the non-forum control villages. This indicates that, among peasants and other weaker sections of society in the developing countries, mass media are more effective when combined with interpersonal communication, as in media forums.

3.2. Related Research Findings

Other research findings concerning media forums in developing countries tend to support these conclusions. Several field experiments have been completed recently in developing countries, which dealt with the effects of radio forums, literacy classes, and opinion leader training, on knowledge, attitudes and the adoption of innovations (Hursh et al, 1968; Menfee & Menfee, 1967; Neurath, 1960; Roy et al, 1969; Spector et al, 1963; Stanfield et al, 1968). The general picture emerging from these studies, is that mass media can be considerable effective in diffusing information on health-care, family planning and improved agricultural techniques, especially when being combined with interpersonal communication in media forums.

The following reasons for the success of media forums can be suggested:

1. Interest in attendance and participation is heightened by group pressure and social expectations;

2. Attitude change appears to be more readily achieved when learners are organized in groups. Additionally, group decisions are more likely to be accepted by individual members if they have been enabled to participate in making the decisions, as usually is the case in media forums.

3. The "novelty effect" of new forms of communication, and the concomitant high credibility which may be attached to such media (electronic as well as interpersonal), may account for some of the success of media forums.

4. Feedback to the communicators from the forums is comparatively immediate.

Summarizing, the participatory approach in multi-media forums seems to have two important advantages over other methods of communication. In the first place, by this approach a relatively extensive target group can be reached. Secondly, participation has a motivating effect on the learners, and therefore contributes to the success of the development effort (see also Bordia, 1979; Kaur, 1978; Sharma, 1978).

A crucial prerequisite for the success of this approach appears to be the use of trained animators at the media centres. They are to articulate the information conveyed by the media with the learners, and, as indispensable channels for feedback, will convert one-way communication. The media, on the other hand, stimulate and guide the animators, and enable them to function in a way the lone teacher may never be able to (Rajkumari, 1981)

4. PROPOSAL FOR A MULTI-MEDIA RESEARCH PROJECT

Research on the effects of multi-media forums has been limited to correlational studies up till now. The research findings mentioned above, do not account statistically for the variations in learning due to the utilization of various media or combinations thereof. They do form a sound basis for further research in this area, however. We should capitalize on the results of correlational studies, and move forward in a series of carefully designed and conducted field experiments, in which the various types of communication channels will be the independent variables. The time-order of the various communication variables and variations in their effects could thus be accounted for, under the socio-economic conditions prevalent in a developing country like India. This is what the present research project intends to do.

4.1. Objectives

The following are the broad objectives of the proposed study:

1. To understand development through communication as a tool for social engineering;

2. To contribute to the development of a coherent methodology of participatory communication;

3. To develop guidelines for the implementation of multi-media projects in developing countries.

Specifically, the objectives of the project are:

1. To determine the impact of different media (i.e., television, radio, animators) and combinations thereof on adult learning at a number of selected learning centres in villages in the District of Chingleput of Tamilnadu State.

2. To compare the levels of knowledge and the attitudes of learners educated through different media and combinations thereof.

3. To determine differences in impact between the integrated and the non-integrated approach to the use of mmedia.

4. To draw audience profiles differentiated along several relevant variables: male-female; socio-economic status; age; tribal-non tribal; educational background.

5. To develop multi-media techniques for implementation at regional, national and international levels.

6. To generate ideas and suggestions for planning multi-media programmes in Tamilnadu State.

7. To standardize the multi-media approach for adult education programmes in Tamilnadu State.

8. To evolve interaction methodologies concerning group discussions and a variety of hardware educational technologies.

4.2. Design

The study will concern 11 literacy centres in 12 villages in the District of Chingleput in Tamilnadu State. Each centre will be subject to different media and combinations of media, constituting the independent variable. Individually, these media will be defined and codified as follows:

Animators are persons trained as such by and for the project. Literacy centres subject to an animator oriented programme, i.e. in which an animator is present, utilizing written and pictorial material, produced by, and for, the project, are designed as **animator forums**, and represented by the letter "A".

Literacy centres subject to the television programme developed by and for the project, are designated as **TV forums**, and represented by the letter "B".

Literacy centres subject to the radio programme developed by and for the project, are designated as **radio forums**, and represented by the letter "C".

Three villages will be subject to individual media only. The literacy centres in these villages can therefore be represented by A, B, and C.

Three villages will be subject to different combinations of two media, utilized according to the non-integrated approach: A-B, A-C, and B-C.

One village will be subject to a non-integrated combination of three media. Its literacy centre can be represented by A-B-C.

Four villages will be subject to integrated programmes, communicated by different combinations of two or three media: AB, AC, CB and ABC.

Finally, one village will function as a control village, which will not be subject to any programme at all.

The content of the programme, as distinguished from the media by which it will be communicated, will be identical for all villages concerned and will therefore be considered as a controlled variable. The programme will be based on an educational need survey to be administered in the villages. The different programmes will be synchronized, by systematizing the exact times of telecast, radio broadcasts and animator presentations. The variable "time" will therefore be controlled as well.

Finally, the villages selected will be of similar socio-economic composition. Such variables as occupation, age, sex and education will therefore be considered controlled.

The study will involve pre- and post-experimental measurement of knowledge levels and attitudes in the 12 villages. Measurements of knowledge levels and attitudes will not be combined into a single index, as this might obscure significant differences in correlations.

The **"impact"** of single or combined media will be measured as the difference between the pre- and post-experimental measurements of knowledge levels and attitudes, decreased by the same difference as measured in the control village. Single or combined media will be called more **"effective"** in relation to each other with a comparative increase in impact.

The comparative analysis of the data will involve a number of sub-designs, which can be grouped as follows:

1. Comparison of impact in villages subject to the same number of media, used according to the same (integrated or non-integrated) approach: A,B,C compared; A-B, B-C, A-C compared; AB, BC, AC compared.

2. Comparison of impact in villages subject to a single medium programme, to villages subject to a two-media programme: A, B and C compared to A-B, B-C, A-C, AB, BC, and AC.

3. Comparison of impact in villages subject to a single medium programme, to villages subject to a three-media programme: A, B and C compared to A-B-C and ABC.

4. Comparison of impact in villages subject to a two-media programme, to villages subject to a three-media programme, controlling for approach: A-B, B-C and A-C compared to A-B-C; AB, BC, and AC compared to ABC.

5. Comparison of impact in villages subject to a non-integrated approach, to those subject to an integrated aproach, controlling for number of media: A-B, B-C and A-C compared to AB, BC, and AC; A-B-C compared to ABC.

6. Comparison of effectiveness of single and combined media as measured by impact on knowledge levels, to effectiveness measured by impact on attitudes.

7. Comparison of impact on audiences differentiated by: socio-economic status; age; sex; educational background; ethnic background.

8. Comparison of effectiveness rankings for different audiences.

4.3. Hypotheses

Analyzing the data along the lines outlined above, a number of hypotheses can be tested. These have been based on existing research findings pertaining to India and other Third World countries. Whenever relevant research-findings were contradictory or non-existent, null hypotheses have been resorted to.

1. The impact of all single and combined media forums will be positive;

2.1. Animator forums will be more effective than other single medium forums;

2.2. There will be no significant difference in effectiveness between radio and television forums;

2.3. Two-media forums combining animators with either radio or television will be more effective than radio-television forums;

2.4. There will be no significant difference in effectiveness between animator-radio and animator-television forums;

3. The more media have been combined in a forum, the more effective it will be;

4. The integrated approach to multi-media forums will be more effective than the non-integrated approach;

5. There will be no significant differences between the effectiveness of single and combined media forums as measured by impact on knowledge levels, and as measured by impact on attitudes;

6.1. There will be a significant positive correlation between learning and socio-economic status;

6.2. There will be a significant positive correlation between educational background and learning;

6.3. There will not be a significant correlation between sex and learning;

6.4. There will be a significant negative correlation between age and learning;

7. Hypotheses 2.1. to 5 will hold true for all audiences to the same degree.

4.4. Sample

Taking into consideration the size of the sample, the nature of its units, and the nature of the research design, the sample will not be taken at random. Instead, the 12 villages will be selected carefully, taking into account that they will have to be as similar as possible in relation to socio-economic position, age and sex ratio, and the educational background of the inhabitants. Other factors which will have to be taken into account are the attitudes of the villagers to the project, their educational needs, the size of the villages, their relative proximity to urban centres, and the nature and number of communication channels reaching them.

It will be clear that selection of the target villages will therefore be a complex task. However, since the comparability of the villages is crucial to the validity of the research project, the utmost care will have to be taken to safeguard the experiment from extraneous variables. The villages will be pre-selected on the basis of existing survey data. Pre-selection will be followed by short but intensive field studies of the 12 villages, in which the factors mentioned above will be investigated. These studies, the results of which will be the basis for the educational programme as well, may result in the replacement of some of the villages by others, which will then have to be similarly investigated.

The field studies may also serve to identify unforeseen variables which will have to be taken into account in selecting the villages, or in the final analysis of the research findings. They are, therefore, of fundamental importance to the project in general.

4.5. Research Instruments

The research instruments which will be used in the selection field study, and in the pre- and post- experimental measurements of knowledge levels and attitudes, will be developed by and for the project itself. Naturally, the project does not take place in a scientific vacuum, and the experiences of similar studies will be utilized. However, in our opinion the research instruments will have to be geared to the local situation as closely as possible, and a mere adaptation of existing research instruments will not be sufficient to ensure this.

In the selection field study, the following research instruments will be used:

1. A structured interview schedule, containing subdivisions on:

sex/age/position in the household/household composition/ethnic background; socio-economic status (occupation/caste/income/participation in public affairs); education; communication channels.

2. A structured interview schedule for conducting an educational need survey, which will simultaneously probe attitudes towards the proposed project.

Pre- and post-experimental measurements will be taken by applying:

3. A structured interview schedule, dealing with:

knowledge; attitudes; behaviour expressive of either.

This schedule, obviously the most important to be developed by the project, will be based on the findings of the field study, and will be pre-tested to establish its reliability and validity.

4.6. Research procedure / Timetable

The project will proceed corresponding to the following stages:

1. Collection of additional relevant research findings from India and other Third World countries / Exploration of similar research projects.

   Identification of project personnel.
   Pre-selection of target villages.
   Construction of interview schedules 1. and 2.

2. Selection field study.
Final selection of the 12 target villages.

3. Construction and pre-testing of interview schedule 3. Preparation and production of the educational programmes. Training of the animators.

4. Pre-experimental measurement of knowledge levels and attitudes in the 12 target villages, using interview schedule 3.

5. Exposure of the 11 villages in the experimental group to the educational programmes.

6. Post-experimental measurement of knowledge levels and attitudes.

7. Data processing and analysis.
reporting.
Time budgetting:

Stage 1:	6	months;
Stage 2:	4	months;
Stage 3:	6	months;
Stage 4:	1	month;
Stage 5:	12	months;
Stage 6:	1	month;
Stage 7:	10	months;
Total	40	months.

5. INTERNATIONAL CO-OPERATION

The proposed project will be the joint responsibility of the Department of Adult and Continuing Education of the University of Madras, and the **Educational and Cultural Task Forces (ECUTAF)**, a foundation working in the field of education (distance education in particular), stationed in The Netherlands.

As the co-ordinating agency of the Distance University Consortium (DUC), **ECUTAF** has the ability to mobilize international expert support for the project. This support will take the following form:

1. As a world-wide network of Universities and institutes involved in distance education, DUC will be the main source of information relevant to the present project (stage 1).

2. The animators will be trained by a team of experts of DUC and the University of Madras. Training will include theoretical foundations, case study techniques, adult learning, interaction methodologies, and evaluation techniques (stage 2).

3. DUC will assist in identifying and guiding post-graduate students in one of the social sciences, willing to conduct the selection field studies and the pre- and post-experimental measurements of knowledge levels and attitudes as part of their further training. Their research will be accredited by DUC members (stages 1, 2, 4, 6).

4. DUC will identify a consultant who will assist in data processing and analysis by computer (stage 7).

5. DUC will monitor the project throughout and will advise the acting directors whenever necessary. In general, this can be done at a distance, on the basis of interim reports. Especially during stages 3 and 5, DUC representatives should be present in the field for short periods (1 month) to study the educational programme prepared by the project and its functioning in practice.

6. PROFESSIONAL STAFF

Honorary posts:

Project Director, exercising overall control over the project, and representing it to DUC. This post is to be filled by Prof. Dr. R. Jayagopal, Head of the Department of Adult and Continuing Education of the University of Madras.

Advising Director, representing ECUTAF in the project and responsible for co-ordinating the participation of DUC in the project. This post is to be filled by Dr. J.R. Hakemulder, an ECUTAF consultant.

Joint Project Director, directly in charge of field operations, administration of personnel, finance, accounting and documentation. This post is to be filled by Mr. Ananthasayanam, Population Education Specialist of the Department.

Salaried posts:

Research Associate/Project Officer, responsible for all technical operations, such as selection of the target villages, preparation of the research instruments, overseeing the field studies and the pre- and post experimental measurements. This officer will be appointed for a period of three years.
required qualification: M.A. in one of the social sciences and relevant experience of at least 3 years, or an equivalent combination of training and experience.

Three Junior Research Fellows, assigned to the Project Director, the Joint Project Director and the Research Associate. They will have to carry out any tasks appointed to them during the time the project is in operation.
They will be appointed for a period of 2 years. Required qualifications: M.A. in one of the social sciences (preferably Andragogy), or an equivalent combination of training and experience.

Eight full-time Animators, for a period of 1 year. Required qualifications: a degree from a recognized university, with Sociology as main or ancillory subject. Preference will be given to those who have studied Adult Education, and to local applicants.

Consultancies:

Two educationists, for a period of three months, taking part in the training of the animators.

One educationist, for two periods of one month, to advise on the preparations of the educational programme, and to monitor its operation in the field (DUC representative).

One sociologist, for two periods of one month, co-operating with the aforementioned educationist (DUC representative).

One computer expert, for a period of two months.

Voluntary (unsalaried):

Twelve Research workers, who will carry out the selection field studies and the pre- and post-experimental measurements. They should be post-graduate students in one of the social sciences, from India or abroad, who are able to conduct the studies in the local language (Tamil). They will be tutored by the three directors of the project. Expenses incurred on account of the project will be compensated.

7. **BUDGET**

Project Personnel

Professional Staff:

Research Associate/Project Officer, one post for a period of 3 years, at US$ 120 per month	US$ 4,320
Junior Research Fellows, three posts for periods of 2 years, at US$ 60 per month	US$ 4,320
Animators, eight posts for periods of 1 year, at US$ 40 per month	US$ 3,840

Consultants:

Educationists (training animators), two consultancies for periods of 3 months, at US$ 2,500 per month	US$ 15,000
Educationist, one consultancy for 2 periods of 1 month, at US$ 2,500 per month	US$ 5,000
Sociologist, one consultancy for 2 periods of 1 month, at US$ 2,500 per month	US$ 5,000
Computer expert, one consultancy for a period of 2 months, at US 2,500 per month	US$ 5,000

Administrative staff:

Steno-typist, one post for a period of 3 years and 4 months, at US$ 50 per month	US$ 2,000
12 Research Workers, compensation at US$ 2.5 daily	US$ 1,500
Messenger/driver, one post for a period of 3 years, at US$ 25 per month	US$ 900
Total:	US$ 46,880

Equipment

Office:

Two typewriters (Tamil and English)	US$ 1,000
Furniture	US$ 1,100
Stationery	US$ 500

Project:

Seven television sets	US$ 2,800

Seven radio sets		US$ 700
Four cassette tape recorders		US$ 800
Cassettes, 300		US$ 1,280
	Total	US$ 8,180

Travel:

International travel (ECUTAF director, consultants and Joint Project Director).		US$ 13,950
Regional travel		US$ 1,000
	Total	US$ 14,950

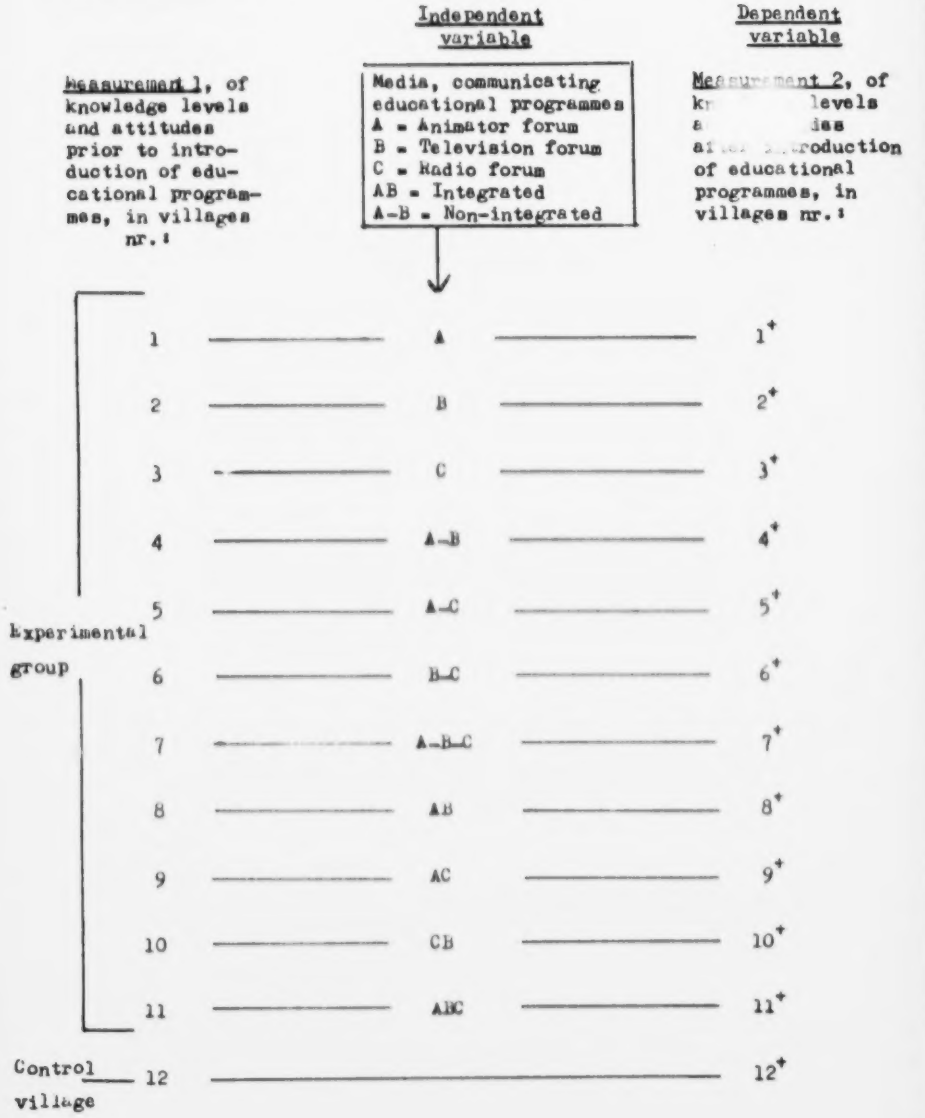
Other:

Printing (of forms, schedules, questionnaires, reports, etc.)		US$ 500
Computer time, three hours		US$ 700
Contingencies (expenses incurred by the voluntary research workers, unforeseen expenditures)		US$ 1,500
	Total	US$ 2,700
	Sub Total	US$ 72,710
ECUTAF 14% Overhead costs		US$ 10,179
	Grand Total	US$ 82,889

Abstract:

Project Personnel	US$ 46,880
Equipment	US$ 8,180
Travel	US$ 14,950
Other	US$ 2,700
Overhead Costs	US$ 10,179
	US$ 82,889

RESEARCH DIAGRAM


Independent variable
Dependent variable
Measurement 1, of knowledge levels and attitudes prior to introduction of educational programmes, in villages nr.:
Media, communicating educational programmes
A = Animator forum
B = Television forum
C = Radio forum
AB = Integrated
A-B = Non-integrated
Measurement 2, of knowledge levels and attitudes after introduction of educational programmes, in villages nr.:
1 A 1+
2 B 2+
3 C 3+
4 A-B 4+
5 A-C 5+
Experimental group
6 B-C 6+
7 A-B-C 7+
8 AB 8+
9 AC 9+
10 CB 10+
11 ABC 11+
Control village
12 12+

IMPACT - The difference between Measurement 1 and Measurement 2 decreased by the difference between 12 and 12+.

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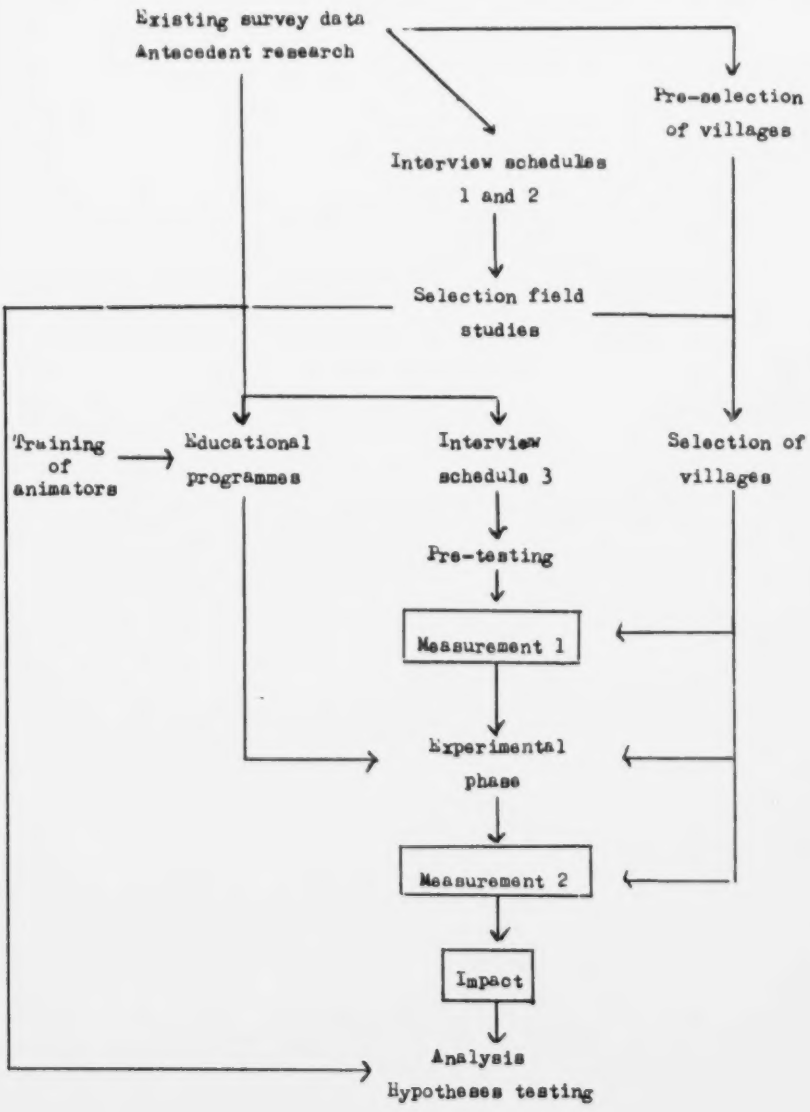
PROCEDURE DIAGRAM/DATA IN- AND OUTPUT



ANNEX I

TWO DEVELOPMENT STRATEGIES

"TERMS OF REFERENCE" OF THE DEVELOPMENT WORKER.

Attitudes towards people and their culture:

DIMENSION	CONVENTIONAL SYSTEM	PARTICIPATORY SYSTEM
Assumption about people's potential	They lack abilities and resources to develop themselves. They are helpless.	They do have abilities to help themselves. They can be mobilised.
Motive for development co-operation.	People need to be helped.	People need to be given space to help themselves.
Place of values.	Western values dominate.	Cognitive respect. Values and cultural identity of people are starting point of co-operation.
Valuation of knowledge.	Western knowledge is superior.	Traditional knowledge is relevant for development and survival.
Role of development worker.	Expert: source of knowledge and skills.	Facilitator: enables people to discover own capacity.
Learning relationship.	Teacher-pupil or know-all versus know-nothing.	Everybody is a teacher and a student All have something to contribute.
Emotional relationship.	Sympathy.	Empathy.
Attitude towards beneficiaries.	Paternalistic.	We are all adults.

Views about development work:

Notion of self-reliance.	Interdependency is stressed. However, dependency of people and and project increases.	Independency is stressed. People's projects remain independent. Awareness about financial dependency of an educational programme.
Aim of development worker.	Implementation of project objectives.	Striving towards a common vision of a society of justice.
Time perspective.	Short term.	Long term.
Approach to problems.	Problem-solving.	Problem-posing.
Type of work.	Executing tasks.	Listening to people. Analysis and provision of information.
Agent of change.	Development worker.	People themselves.
"Owner" of people's future.	Development worker is co-owner.	Destiny owned by people themselves.

Change seen as:	Improvements.	Transformation.
Scope of development.	Compartmentalised.	Holistic.
Approach to co-operation.	Working for - working with.	Enabling.
People seen as:	Targets, objects.	Subjects.
Participation seen as:	Means to achieve ends.	An integral part of the work. End in itself.

ORGANISATION AND ITS OPERATIONAL ASPECTS.

Organisational structure and type of development endeavour.

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Structure of organisation.	Hierarchical, vertical.	Lateral, horizontal.
Type of organisation.	Formal institution.	Movement.
Ownership of the development endeavour.	A legal owner. Project for the people.	Under a legal umbrella. Activities of the people.
Type of development endeavour.	Technical-economical.	Educational-organisational.
Design criteria.	Productivity and economic growth.	Welfare criteria of people themselves.
Origin of work model.	First World industrial management schools.	Third World educational approach. Minority studies; human relations. First World models for organisational design.

Leadership and decision-making.

DIMENSIONS:	CONVENTIONAL SYSTEM	PARTICIPATORY SYSTEM
Leadership position.	Project leader.	Co-ordinator.
Selection of leaders.	Appointment by higher authority.	Preferably selected by team or group
Leadership "make-up".	Domination by male.	Balance between male and female.
Direction of accountability	Up, to the employer, the legal holder and through him to the donor agency. "Employer-loyalty."	Down, to programme members and sideways to peers. Up, to employer but chracterised by "member-loyalty".
Leadership quality.	"Dare take decisions."	"Dare leave decisions to others."
Leadership style.	Authoritative after consultation.	Enabling.

Relationship with colleagues.	Expert-counterpart. Authority centered.	Shared leadership. Authority dispersed.
Leadership training.	Incidental. Few people.	Integral part of work. Many people.
Nature of decision-making.	Face-to-face, often after consultation but with power of veto.	Consensus in groups.
Nature of enforcement.	Coercive.	Normative.
Effect of absence of leader.	Project activities slow down.	Process of development continues.

Goal setting.

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Identification and analysis of community problems.	Donor agency and expatriates.	People themselves.
Source of content of development endeavour.	Expatriates. Exogenous.	People themselves. Endogenous.
Type of solutions.	Symptom curing.	Aimed at elimination of root causes. Structural change.

Communication.

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Mode of communication.	Monologue, consultation.	Dialogue.
Setting of communcation	Formal or traditional meetings.	Workshops.
Sitting arrangement.	Classroom and "moon"shape formation.	In circles without tables.
Direction of ideas, initiatives and information.	Top-down.	Sideways, Bottom-up.
Handling of information.	Not everybody should know everything.	Everybody should know as much as possible.
Channel of communication between donor and beneficiary.	Via project management.	Direct via open dialogue.
Quality of communication between donor and beneficiary.	Prone to misrepresentation.	Tends to approach reality.

Implementation.

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Responsibility for implementation.	Project leader.	People themselves. Collective responsibility.
Historical development.	Sequence of separate project phases.	An evolving process.
Planning format.	Blue-print. Project approach.	Open-ended. Process approach.
Types of activity.	Limited variety.	Large variety.
Pursuit of work.	Establishment of routines. Predictability.	Stimulation of creativity. Unpredictability.
Operational mode of work.	Teamwork by few at top. Further, individually according of competence.	Teamwork permeates throughout programme.
Original beneficiaries	Large amorphous group. Individuals.	Well defined usually small groups.
Commitment to beneficiary interests.	Support if they coincide with project Otherwise "lip-service."	Solidarity."Sticking out ones neck"
"Visitability".	Easy to show achievements.	Difficult to show results.
Approach to public relations.	Active.	Passive.
Use of time.	Ad hoc. Time of visitors and management is precious.	Long-term commitment. Time of people at grass-roots is precious.
Volunteer participation	Incidental. Few.	Frequent. Many.

Finance and other resources.

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Origin of resources.	Mainly exogenous.	Mainly endogenous.
Source of finance.	One major donor.	More equal donors.
Relationship between donor and beneficiary.	Patron-client. Have - have-not.	Partnership based on reciprocity. We have eachother something to offer
Money uesed mainly for:	Capital investments. Purchase of commodities.	Educational and salaries. Investment in people.
Expenditure per beneficiary.	High.	Low.

Evaluation.

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Initiative.	By donor agency.	Usually by people themselves.
Conduct of evaluation.	Preference for "outsider" evaluations.	By people themselves or at least with their involvement.
Quality considerations.	Objectivity, neutrality.	Subjectivity, with attempt to minimise personal bias.
Focus on:	Achievements and obstacles.	Needs of people.
Purpose.	Control. Justification of involvement.	Confidence building. Reorrientation.
Clarity of purpose.	Not clear to everybody involved.	Attempts to clarity to all involved.
Type of criteria.	Mainly quantitative.	Maily qualitative.
Attention to donor role	Little.	Subject to scrutiny.
Frequency.	Incidental.	Continuous.
Report writing by:	By "outsider."	Participants themselves.
Editing by:	Donor agency.	Participants themselves. Professionals recruited by participants.

DISPOSITION OF PEOPLE .

DIMENSIONS:	CONVENTIONAL SYSTEM:	PARTICIPATORY SYSTEM:
Perception of origin.	Alien.	Authentic.
Level of trusts.	In general low. At times doubts about intentions of project management.	In general high. Trust seen as precondition for fruitful co-operation.
Period needed for trust development.	Relatively long.	Relatively short.
Perception of the allocation of benefits.	Project management. The rich. The Government. Expatriates.	People themselves.
Risk of innovations.	High. Not calculable.	Low. Overseable.
Level of awareness.	Relatively low.	Relatively high.
Degree of unity.	Lack of unity on main issues.	Sense of enhanced unity.

****

ANNEX II

SHARING WISDOM

Using videotape, people in many isolated villages are being given the opportunity to share in problem solving

Imagine a small village in Mali - dusty, dry, isolated, and poor. There is no electricity, no running water. The people are farmers, eking out a meagre subsistence from the arid soil. On this particular morning, two women stand in front of a mud-brick house pounding millet, their bodies wrapped in brightly coloured cotton sarongs. Their babies sleep in slings of cloth on their backs.

Another woman from the village sits on the ground between them, listening as they discuss local problems. She is dressed similarly, and is also barefoot. But one thing about her is different: she has a video camera on her shoulder.

Nearby in another village women are working with sound equipment. They are taping conversations - about the problems of good soil that is being overworked and turning into dust; about the desert that is gradualy creeping into their lands; and about ways to conserve fuelwood and plant new trees. When finished, the tape will be sent to other villages in the developing world, and to international agencies in the industrialised world.

These women are members of a unique communications organisation: Village Video Network. Since the mid-1970's, scenes like this have been taking place in a growing number of developing countries. Local people - often illiterate - have been learning a communications skill that enables them to share ideas with others in similar situations.

The information exchanged on these video-tapes often leads to practical solutions to problems ranging from overpopulation to energy shortages to basic health and nutrition needs. And the knowledge gained gives participants an unusually rich opportunity to exercise control over their own lives.

A major obstacle to development efforts, most observers agree, is poor communication between the providers and the recipients of aid. No matter how eager foreign experts may be to understand, the realities of the village life are not easily conveyed in reports they write. Most development planners work from data culled by foreigners visiting the developing world - second- or third-hand accounts which rarely present life's true intricacies.

Foreign - often Western- experts are also usually the communicators of development strategies to the villagers themselves. But their inability to communicate relevant ideas effectively is greatly impaired by their very foreignness. And if their message does get through, their work may foster dependence on outsiders, rather than self-reliance, on the part of the people involved. Moreover, the people at whom development schemes are aimed almost never have an opportunity to express their views and concerns to anyone outside their immediate community.

"It is my experience," wrote Martha Stuart, founder of the Village Video Network (VVN), "that villagers doing family planning work in Jamaica and Egypt have much more to learn from each other than either can learn from what filters down to them from their respective national governments or from international agencies." Martha Stuart, who died in 1985, wanted to listen to those who were being talked a b o u t and give them the opportunity to share their views with others, rather than always having professionals analysing people's experiences.

With its central office in New York, VVN consists of groups in Mali, Egypt, India, Jamaica, China, Guyana, Indonesia, Nigeria, Zimbabwe, a.o. which have been trained in video production techniques, and to whom video taping and sound equipment, as well as blank tapes have been supplied. Each time a group produces a tape, it sends a copy to the New York office, which then forwards a copy to other countries on a lending-library basis. Tapes are almost always made in the local language, but an additional sound track in another language can easily be provided by New York or local staff.

People on opposite sides of the globe can learn from each other's experiences by screening the tapes they borrow from VVN. A recent exchange between China and Guyana illustrates this point.

"We did a workshop in China where a group of villagers documented the ecological cycle of pig manure to biogas," says Barkley Stuart, son of Martha. "In the tape they give you a tour of their village and show the process of making biogas. And they show a demonstration of how clean the biogas is compared with the burning wood they used to use. As a result of this tape, people in Guyana who saw it made their own biogas digesters ....."

Video equipment is relatively light and easy to handle, providing much more mobility than would be possible with film equipment. It also offers the advantage of instant replay, with no time or money spent on developing film. Video cameras and sound equipment can be operated off a battery or generator.

It is our experience that you can't tape in a village without giving the people some feedback - and letting them see themselves. It is a big event; when you play the tape back you get the whole village there in no time.

As said before, the founder of the foundation was Martha Stuart. She had worked in television and radio since the 1950's. In 1965, she arranged a conference on birth control for Planned Parenthood of America, which resulted in a book "The Emerging Woman: the Impact of Family Planning." Martha Stuart began producing video documentaries in 1966.

In 1974, she went to Egypt to produce a video programme on family planning, consisting of a group discussion among village women. It was then that the idea came to her which provided the inspiration for the Village Video Network. Her son states: "It occured to her that what she was doing only served her purposes. She wanted other people to understand these villagers, yes. But she also wanted the villagers to have the same access to this communication medium as she did. Instead of only gathering information for international purposes, she decided to give the communications tools to the people themselves. So while she was there, she taught a group of people how to use the video equipment, and then she left it with them."

Those Egyptians were the first members of the Village Video Network. Later she started training groups in video production in other countries. According to Barkley Stuart, his mother felt "that we live in a world where politicians represent people, but the people's views are not necessarily the same as the politicians." When you use film or centralised television, you end up with controlled or managed information. But when private individuals learn to use video, information is no longer controlled by politicians. If you give the people, who are actually doing something, the tools for communication, you get more pure and emotionally true information. (*)

Since 1981, VVN has been affiliated with the United Nations University in Tokyo, which provided some of the funds that allow the network to supply its various branches with materials such as blank videotapes. Additional financing comes from the proceeds of the other activities of Martha Stuart Communications, such as selling to colleges, and libraries in the USA. Funding for training and equipment is also provided on a project-by-project basis.

One of the most significant aspects of the VVN is its committment to demonstrating that illiteracy is no barrier to effective communication. With a literacy rate of less than 50 per cent in many developing countries, Martha Stuart wanted to ensure that people, whether or not they could read or write, would be able to express themselves. What has been proven is that illiterates can learn to use very sophisticated technologies very effectively. This, however, does not mean that literacy programmes are not highly valued.

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* Jan R.Hakemulder: "Top-down and Bottom-up Approach." New Delhi, 1986.

One outstanding example of the illiterate programmes has been VVN's experience with a labour union for women in India's vast sector of undocumented workers. The Self-Employed Women's Association (SEWA) joined VVN after its director, Ela Bhatt, attended the first international VVN meeting in Bamako, Mali, in 1982. Since then, Video SEWA has trained about 20 of SEWA's members. Most of them are illiterate. SEWA's video producers and technicians are vegetable vendors, hand block printers, carpenters, cane workers, and junksmiths. Video SEWA has produced a large number of videotapes, which they are now selling to other organisations in India, as well as distributing to other countries through VVN. These tapes have ranged in subject-matter from trade techniques and nutrition to farming and family health.

Video has proved to be a very powerful medium. It seems to be possible that the people in the villages produce beautiful, and from educational point of view effective video films. The only thing needed is to make use of a network, to give a short training to the people and to provide them with the hard ware and soft ware.

A good example is Mali, where a group of women had been trained. Most of them were illiterate women. They had never seen even television, yet they are excellent in the production aspect. First of all they are very steady: strong shoulders. And they don't get distracted. They have good concentration. Then they have a good eye in the sense that they are able to perceive. Once they are clear about a subject, then they are very clear. They were producing f.i. a tape on diarrhea in a village. (Dehydration, resulting from diarrhea, is the major cause of infant and young child mortality in developing countries). They knew the situation so well. The way the camera moved: the drinking water facility, the pond where people wash, how dry the land is; then the kitchen and the pitcher where they put the water. Diarrhea was the subject, but they also shot the whole cause of diarrhea, which is water and the facilities and how dirty it all is.

One aspect of the VVN's work that surprises some observers is that in dry, dusty parts of the world illiterate villagers maintain video equipment in good condition, virtually indefinitely. There have been almost no incidents of damage to equipment anywhere. "The idea is that the people feel they "own" the equipment in a very special sense. Its use seems to have given them self-confidence and a sense of involvement in shaping their own lives.

Martha Stuart's vision for Village Video Network is perhaps best summed up in her own words: "By giving global reach and social import to this kind of personal exchange," she wrote, "to what is essentially people encouraging other people, I believe we can tap a pool of human energy and healing power of untold dimension. Once people move beyond a win/lose mentality, they are able to relate to each other on the basis of trust rather than fear..... For the first time we have the means in video technology truly to girdle the globe with examples of people helping each other. I find it hard to imagine a more powerful method for establishing world peace and supporting human health and growth everywhere. But it begins at village scale."

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TEXT DESIGN IN DISTANCE EDUCATION : PRINT AND FACILITATING ADULT LEARNING

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ABSTRACT

Most distance education programmes use printed text in some way. In the context of new challenges introduced by changes in technology and organizations in South Africa, this paper reviews some of the research on printed text in correspondence and self-instructional material, and looks at techniques that can be used to facilitate learning from such material.

INTRODUCTION

It is intriguing that the practitioners of distance education should reflect on their discipline at this conference in the time honoured ways of the lecture, the symposium and the face to face discussion. Thus do we all give some obeisance to our Medieval academic ancestors even whilst purporting to face towards the 21st century. But the gargantuan size of the conference documentation, unMedieval and non-traditional, confronts us with the reality of print as the staple medium of distance education for some time to come.

In this paper we wish to examine text design for distance education in the context of the new challenges and possibilities that developments in the technology of print, in the educational technology of instructional text, and in the world of educational organizations present to us. In addition we wish to provide a very simple outline of key findings in the design of instructional text and its use.

The paper itself is divided into seven sections, namely:

1. New challenges and possibilities in instructional text
2. Discerning instructional text
3. Desktop publishing - everybody's backyard UNISA
4. Problems with instructional text
5. Structuring text
6. Designing the printed text
7. Using distance education texts

1. NEW CHALLENGES AND POSSIBILITIES IN INSTRUCTIONAL TEXT

Most of us have probably forgotten how dreadful South African produced correspondence courses of twenty years ago looked. It was the era of the typewriter, the wax stencil and the Roneo or Gestetner duplicator. The content was not all that marvellous either, being invariably "lecture notes", and prepared in apparently sublime indifference to what was even then known about human learning. The very inadequacy of the text printing technology did however act as something of an equalizer between the big institution (say UNISA) and the backyard operator (say the clergyman running a theology course from his parish office). The latter was not necessarily inferior in any sense to the former. In the seventies and until recently the organizations that could afford offset litho presses dominated the market and because writing and editing material is an inordinately time consuming task, could also afford to house the course writers to do the work.

Today the print media in distance education are in the throes of a technological revolution that will fundamentally change many of the conventional wisdoms and practices of South African distance education. The technological change could also enable educators to capitalise on the growth in educational technology (in the non-hardware sense (1)) that had quietly occurred in the seventies and eighties. This print media revolution is solidly based on the personal computer, word and text processing programs and modern printers. The challenges this change will bring to traditional distance education organizations will need to be faced at every level, particularly the ideological, for it will not be met by buying bigger printing presses, computers and laser printers.

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1. We use educational technology in the second sense stated by the Commission on Instructional Technology (Tickton, 1972):

> Instructional technology can be defined in two ways. In its more familiar sense, it means the media born of the communications revolution which can be used for instructional purposes alongside the teacher, textbook and blackboard ...
>
> The second and less familiar definition of instructional technology goes beyond any particular medium or device. In this sense, instructional technology is more than the sum of its parts. It is a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and non-human resources to bring about more effective instruction. The widespread acceptance and application of this broad definition belongs to the future.
>
> Commission on Instructional Technology :
> To improve learning (1972)

Three challenges which we anticipate to be particularly strong will be :

* the demand by a growing variety of organizations to participate in distance education

* the blurring of the distinction between face to face teaching and distance education that will make new demands of text writers

* the democratisation of educational provision, practices and use of resources and hence also of the genuine accessibility of educational texts and courses.

The rise of alternative distance education organizations

In the mid-seventies formal distance education was monopolized at the tertiary level by UNISA and Theological Education by Extension College. Formal school school equivalency courses (usually preparing students for state controlled examinations) were run by SACHED's Turret College and a number of commercial correspondence colleges. These latter also ran a number of commercially orientated courses (many of dubious value as career qualifications). There were of course also a number of Bible courses, usually propagating some denominational or doctrinal line. The only disturbance in this relatively stable situation was the odd fly by night correspondence college but legal controls generally dealt with such nuisances.

Today we have a different situation in which a large number of small organizations engaged in a complex variety of educational and quasi-political work and a fairly big number of very big trade unions are entering the ranks of producers of instructional text, much of which is used or could be used in a distance education mode. The exciting thing about nascent organizational base is that it has the incredible advantage of having highly contextual and concrete links with the real life concerns of people, a forward looking and potentially innovative approach to education, and organizers and educators who are committed and close to their "students" in a way that is seldom approached by traditional distance education institutions. Two model examples of the kind of organizations we refer to are Learn and Teach and the various Career Information Centres. Centres of continuing and adult education at traditional universities are also increasingly venturing into the production of self-instructional text for various kinds of extension education (and are perhaps the vanguard of those who will challenge UNISA's legally enshrined monopoly of correspondence tuition for degrees).

What the desk-top publishing revolution has done is to provide this mass of organizational creativity with the means to produce material qualitatively equal to, if not superior to, that produced by big educational organizations and the very nature of the new technology does not necessarily favour economies of scale. Desk-top publishing equipment is ideal for the small creative team and lends itself to creative co-operation between groups.

The blurring of the distinction between distance and face to face education

Theological Education by Extension, which grew exponentially as a world movement in the last two decades, had already sounded the death knell of pure "correspondence education" in which the solitary student studied texts provided by a far away institution. TEE put the institution prepared text together with the local learning and action group guided by a local tutor. Although theory and reality do not always coincide the move towards a more interactive and therefore face to face linking of distance educators, their texts, and their students is, we believe, irresistable (because it works better!). This will and should mean that distance education texts will become more contextual, and more amenable to evaluation and being changed by the learners. At the very least it means that the instructional text should become more flexible and adaptable to a variety of modes - face to face instruction, tutoring, self-instruction, correspondence.

The democratisation of the distance learning text

This blend of a new organisational base, a new technology and a more interactive relationship with the student, provides a powerful foundation for a genuine democratisation of educational provision and use. With computer based technology, texts can be changed at any site by local course writers, tutors and learners. The possibility is to move away from the pre-packaged institution written course to the negotiated or even student written reader or course (already illustrated in the readers produced by new literates in various non-traditional literacy schemes). The struggle for democratisation and openness in South African education as a whole will not leave distance education unshaken. This growth can be hindered or repressed but distance educators, even in the most traditional of distance education institutions, can facilitate it. One area of such help is to become more fluent themselves in text design and in their working with others to make such texts more accessible to all.

8. DISCERNING INSTRUCTIONAL TEXT

It can be argued that we only really started looking at books and texts since Marshall McLuhan in The Gutenberg galaxy (1962) and subsequent books (McLuhan, 1967; McLuhan and Fiore, 1967) showed us what curious artifacts they were. Suffice to say that we cannot any longer believe that writing and print are simply transcribed words. We now see the visual and ikonic aspects of text and books far more clearly and a new generation of researchers are exploring the ways in which literacy and print alter human consciousness (for example, Goody (1977), Stubbs (1980), Cole and Scribner (1981), Ong (1982), Street (1984)).

Contemporary publishing, particularly of the glossier of educational books, especially those for older children, is replete with models of this awareness of the printed text. They combine sound use of the body of knowledge that has accumulated about how people learn from texts with effective layout and graphic artistry. A good example is The Joy of Knowledge encyclopaedia set published by Mitchell Beazley Enclopaedias in the early eighties. Each volume includes a preface that explains how the book is to be used:

> Every topic in The Joy of Knowledge takes the form of an article that occupies two facing pages of text and pictures: what we call a "spread". Each two-page spread in the book is organized in the same way. It is the heart of our approach to explaining things.
>
> The spread system is a strict discipline but once you get used to it we hope you'll find the structure to be systematic and reassuring. ...
>
> Each spread in Man in Society, as throughout The Joy of Knowledge, tells a self-contained story. It explains all the essential facts you need to know about its subject in as efficient a manner as possible. We believe that the discipline of having to get in all the essential and relevant facts in this comparatively small space actually makes for better results than a rambling essay could achieve - text that has to get straight to the point, pictures and diagrams that illustrate the salient points in a clear and comprehensible fashion and captions that really work and explain the point of the pictures.
>
> The spreads are, in a sense, the building blocks of knowledge. Like the various circuits and components that go to make up a computer, they are also systematically "programmed" to help the reader find out things more easily and remember them better. Each spread, for example, has a main article of about 850 words summarising the subject. This article is illustrated by an average of ten pictures and diagrams, the captions of which both complement and supplement the basic information in the main article. Each spread, too, has a "key" picture or diagram in the top right-hand corner. The purpose of this picture is twofold: it summarises the story of the spread visually and it is intended to act as a memory stimulator to help you to recall all the integrated facts and pictures on a given page.

This structuring of text using visual cues is vital if text is to become accessible to the majority of people who have not been be taught or become habitual users of the higher level reading skills that are part of the "academic literacy" required by universities.

> Students there are taught to 'read' a text by skipping bits, searching forwards and backwards, using contents and index and focussing on what is required for specific purposes rather than simply reading from beginning to end. Teachers in universities have no little difficulty imparting these skills to students, which suggests that they are not a prominent part of earlier stages of English education.
>
> (Street, 1984, pp. 154-155)

Hartley (1978) provides an excellent summary of research into the effective visual structuring of instructional text. Parallel developments in text design include building study formulae such as Robinson's SQ3R (Robinson, 1970) into the text, a practice extensively used in SACHED texts, as well as use of devices such as "advance organizers" which help to make new material meaningful to the learner by giving it an appropriate context and linking the new information with the student's existing knowledge.

These methods of enhancing the effectiveness of instructional text apply to all situations, not only distance education ones, but must be of crucial importance in the latter.

3. DESKTOP PUBLISHING -EVERYBODY'S BACKYARD UNIX

"Small is beautiful" was one of the more endearing slogans of the sixties. That we now live in a considerably uglier and nastier world does not mean that its truth (or half truth) has been disproved. Computer technology can now put a personal computer, a wordprocessing package, and a printer of reasonable quality into the hands of any educational group that wants to produce an instructional text or distance education course. For a somewhat larger investment, yet under 30 thousand rands, one can have command of computers, software and a laser printer with a variety of fonts that can produce material that looks better than most material produced by the giants. The Weekly Mail newspaper, which pioneered the use of this technology in the newspaper field, looks better than most major newspapers in the country.

There are important consequences arising from the new technology. Institutions where course writing takes place can be far more easily devolved into smaller units. Course writers can gain control of the layout and packaging of their material in a way that it was unrealistic to expect in the previous situation where course writers with sophisticated layout skills were few and far between.

McLuhan (McLuhan and Fiore, 1967) had already foreseen that the Xerox machine would do things to people's perception of publishing (and copyright!):

> Xerography - every man's brain-picker - heralds the times of instant publishing. Anybody can now become both author and publisher. Take any books on any subject and custom make your own book by simply xeroxing a chapter from this one, a chapter from that one - instant steal!

Publishing is a little more sophisticated than that but the time of participatory publishing is near. A crucial question is the extent that the big distance education establishments will see this as a glorious growth or a threat to their existence. It need not be, the editorial resources and text development skills that the bigger institutions can command are important and Wright's warning is apposite:

> But perhaps the most serious of all is the risk that the amateur production systems may bypass the writer's interaction with editorial expertise that could improve the quality of the text. (Wright, 1985, p. 65)

4. PROBLEMS WITH INSTRUCTIONAL TEXT

The somewhat rosy picture we may seem to have painted of the dawn of a new age of desktop publishing in which energetic teams of idealistic educators scattered throughout the land will faciliate the release of a vast explosion of knowledge and enlightenment is of course threatened by certain problems, not least of which is the South African governmental regime. But there is another regime, possibly more insidious, and which has greater hegemonic power, the regime of academic literacy, a regime moreover which has always had a good press because it writes all the books. The hegemony of the literate over the illiterate, their control of discourse about the world, raises important questions in a country with an illiteracy rate of 30% (Wedepohl, 1984).

Literate hegemony and the tendency of distance education institutions to employ people who achieved well in the essay writing and conference paper producing skills that are the asssessment rites in academia leads to the intellectual's equivalent of AIDS. It is a fatal lack of resistance (so well described by Labov (1973)), originating in the writer's use of the middle class "elaborated code" of language (Bernstein, 1971) to speaking simply, concisely and concretely. We write too much, in too complex a way, with too many qualifications, with too much jargon, empty elaboration, redundancy, verbiage and irrelevant detail. The regime of academic literacy may be one of the greatest enemies of reform in distance education text production.

Furthermore there is a lack of trained course writers as distinct from writers of essays and lectures and we know of no institution or programme in South Africa that trains such people other than on an ad hoc and informal basis. (There are of course overseas correspondence courses run by the Council for Educational Technology and the International Extension College, and a number of useful books such as Jenkins (1981).)

The very ease with which the new technology can emulate things such as the justification of right hand margins and centre titles can lead the inexperienced desk top publisher to slavishly follow outdated layout practices that are in fact hindrances to learning and reading. Similarly, attempts to improve the pictorial and graphic interest in publications can be overdone and counterproductive. Two excellent texts, SACHED's **Read well** (Cretchley and Stacey, 1983) and the University of the Western Cape's adult education text on community organisation (Steyn and Walters, 1986) are examples of the desire to be visually interesting harming the coherence of what would overwise be well constructed and exciting texts.

There are other problems (such as courses being overcontextualising to the extent that they are only usable by very small groups of people for very short periods) but this is hardly something of epidemic proportions.

A final problem is that the very enthusiasm with which we try to systematically plan instructional text may tend to blind us to the broader picture. We can best illustrate this by an anecdote. In a workshop in which we were displaying a state of the art instructional text on biology that had built in study formulae, advance organizers, carefully designed layout, skillfully integrated student activities, etc. (as an example of a systematic application of educational technology it was superb) we were all shattered when one student, looking at the text said very quietly and simply, "What an awful way to study biology!". He was right, it was an awful, arid, bookish way to study something that should be done outside in the living environment. We do need constantly to relook at the texts we design to see them in context. Educational technology is not enough.

3. STRUCTURING THE TEXT

Duffy and Waller (1985, p. xiii) remark of most instructional texts that:

> only a small number ... are intended to be learned, and few are designed to be read in the conventional sense of a linear processing from beginning to end.

This claim may offend against the commonsense view that most distance education texts are meant to be read and studied sequentially and completely, but is in harmony with our belief that texts will increasingly need to be designed for multipurpose and therefore more flexible use.

Whilst all instructional text needs to be carefully structured, the possibility that it may and probably will be used a la carte demands a far greater degree of rigorous planning and an anticipation of its possible uses.

One of the first aspects that needs to be considered here is the element of time. There are very few texts that we have seen that have been broken up into genuinely manageable units with respect to the time it takes people to read and write. (Silent reading speeds at South African tertiary institutions range from about 120 to 500 words per minute. Writing speeds are much slower - people cannot write memorized material or transcribe printed materials faster than about 40 words per minute.) Nor, in distance education, does there appear to be realistic assessment of the time it takes the average student to plan written work.

The structuring of material also needs to take into consideration the possible use of organizers, study formulae built into the text, and the "chunking" of text into an appropriate number of sections. All of this will be enhanced (or hindered by) the quality of the text layout.

Organizers

Organizers are teaching devices that try to bridge the gap between what the learner already knows and what he needs to know if he is to learn the new material most actively and expeditiously. Normally they precede the material to be learnt and hence are commonly called advance organizers. They have to :

> take into account relevant existing ideas in the learner's cognitive structure (so that they themselves are learnable and can also explicitly mobilize all relevant content already available in that structure)...
>
> (Ausubel et al, 1978, pp. 164)

Good advance organizers (Jonassen, 1982) are short (50 to 500 words, about 10 to 15 percent of a passage length), and may be concrete models, analogies, examples, sets of higher order rules, or discussions of main themes in general terms. Less effective are factual presentations, summaries, outlines or directions to attend to specific portions of the text.

Research on using organizers has suggested that they should be put in a consistent place because it helps readers find them easily (MacDonald-Ross, 1979), the assumption being made that readers will read the text sequentially. Anderson et al (1978) argue that placing organizers at the beginning is only useful if the learner has pre-knowledge of some kind. Otherwise organizers or summaries are better positioned at the end of instruction. Ausubel (1978) summarises the work of several researchers describing the various positions and effects of organizers in text.

Barnes (1972) found that in 98 per cent of the cases an advance organizer resulted in a 10 to 18 per cent increase in mean learning score.

Study skills formulae

A number of distance education courses now systematically build a study skills formulae (usually the SQ3R (Survey, Question, Read, Recite, Review) of Robinson (1970) or one of the inumerable variants thereof) into the text. Among the arguments for this are that firstly it improves learning and secondly that it is more effective than teaching study skills in isolation. There are many examples of its use in SACHED courses as well as in some Theological Education by Extension College texts.

Chunking

The storage capacity of the short-term memory appears to be heavily determined by the number of 'chunks' of material it is called upon to handle. The retention of material in courses can be improved by placing it in an appropriate number (the magic 7 is suggested) of identifiable "chunks" (Baddeley, 1983; Broadbent, 1975) and where necessary "repackaging" the material within each big chunk into a set of smaller chunks.

Layout

Obviously the layout of text is an important structuring device and titles and headings at the beginnings of texts and sections of texts orientate the learner and help with with subsequent recall.

Headings can function as simple advance organizers, providing a context that can make a significant difference in readers' ability to recall the ideas in a passage.

Headings and sub-headings may be more effective in the form of questions that encourage the reader to examine what he or she is reading and to look for related facts and ideas.

Many of the more technical aspects of layout, which will be considered in the next section of this paper, have a significant impact on the structuring of the text and in particular on how it is perceived as structured by the user.

Programmed instruction

The supreme example of the rigidly structured text is the programmed text. They are not very popular today although obviously alive and well (resucitated?) in various computer programs (some of which positively creak with obsolescence). The reaction has been partly against the overdomination of the behavioural objectives approach to educational design (witnessed in the noticeable dropping of these from many second generation Open University texts). More mundanely, producing programmed texts costs time and money. But we can still learn from the programming movement. Many programmes teach as successfully as (or more successfully than) many teachers and sometimes do it in less time (Hartley, 1978). The problem for distance education is that evidence shows that teachers working with a programme, as against teachers working alone and programmes working alone, provide the most successful approach.

Making Information Accessible

Orna (1985, p. 27) sums up the responsibility of the course writer for making information accessible through structure:

> Structure takes first place; the author should look at the chosen structure in relation to what he or she knows of the readers and the ways in which they will want to use the information, and should ask such questions as: Does the chosen sequence fit the likely knowledge, experience, and approach of the readers? Does it flow logically from a starting point related to their experience, through stages that are clearly linked to one another? Does it present at the right point the information needed for understanding what comes later? Does it refer forward and backward to other related information necessary to give the reader the whole picture? Can the reader who needs a view of the whole subject easily find one? Are their convenient breaks in the text where progress so far can be reviewed?

6. DESIGNING THE PRINTED PAGE

Some of the most useful advice about instructional text design has been written in the context of material written for people with inadequate education, often in fact, adult new literates. But, with some qualifications, what makes the reading and learning process easier for the new literate faced with a printed text is probably helpful to everybody.

Motivation

Motivation may be the factor that enables new literates to overcome the lack of a favourable reading environment. It is also the factor that enables distance learners to read their courses and study. To this end, it is vital that courses should be attractively presented as well as interesting and useful in themselves. This means that as far as possible the printed page should have layout of the highest standard.

Guidelines for instructional text presentation

These guidelines will be discussed under two main headings:-

1. **Physical** - what the material should look like

2. **Language** - how it should be written

1. Physical features of a text that make it easier to read

Some of the physical features of good quality literature for newly literate adults are common to all well produced reading materials, whatever the intended audience or market. Factors like paper quality, type of print used, layout or organisation of the page, all affect the ease with which any text can be read.

Factors that will be examined are :

(a) Print
(b) Layout
(c) Illustrations
(d) Paper
(e) Cover
(f) Size and format
(g) Numbering systems

(a) Print.

These are some of the more important findings about the choice and use of type. Most of these points have been based on the research of Miles A. Tinker (1963).

Small print is more difficult to read than larger print. But, reading efficiency decreases as print size increases above a certain size because the movement of the eyes is slowed down (Lyman, 1976, p. 188). For books for adult new literates 14 point type is a good size and for newspapers nothing smaller than 10 point should be used (UNESCO, 1963). The ideal size for the average reader is 10 to 12 point. If type is too small readers may skip over material or develop eyestrain. If type is too large it may take up too much space.

Typefaces should :

- have firm lines
- withstand degradation when printed or copied
- be open and even in spacing
- have no idiosyncratic features

Emphasized print should be used with caution:

- Capitals are harder to recognize than lower case, hence avoid their use as an emphasis - rather use lower case in bold print or underlined.
- Changes from the typographic norm (e.g. italics, bold print, or underling) have been shown to affect recall (Hartley, Bartlett, and Brauthwaite, 1980) but readers need to be told why certain things have been underlined or emphasised in this way. They should be used sparingly. Combining too many highlighting techniques impedes comprehension.

Evidence suggests that lined paper for written answers encourages legibility (Barnhill, Hartley and Davies, 1978, p. 62) and does not discourage creativity. It is also clear that dotted lines are harder to write on than lines!

Typefaces with serifs are often easier to read than sans-serif faces and readers (particularly older readers) may be more familiar with them.

With new computerised typesetting facilities one may have access to a wide variety of fonts (that is, different styles of type). The temptation to use them all on every page needs to be resisted. Use no more than two or three in a text, plus the italic version of the main text face. Even with text set on electronic typewriters with a variety of "golf-balls" or "daisy wheels" a confusing mishmash of typefaces can be achieved. This not to say that it is not useful to highlight functionally different part of text (such as student tasks or summaries) by use of a different typeface.

Proportionally spaced print is easier to read and looks better.

In preparing text for printing only leave one word space after full stops (not the two often left by typists).

Justification of the right hand margin is a standard convention in most printed books. Text looks "printed" (and also more formal) if the right hand margin is justified. Until recently justification could only be done by professional printers. Now virtually any electronic typewriter can do it (though not necessarily in the most sophisticated way). This is something of a misfortune because:

- justified text is in fact harder to read than unjustified text (because the eye has to adjust to different spacing between the letters)
- justification done on cheaper, small scale equipment is frequently done very badly with enormous gaps between the words.
- it increases production costs (it is easier to make corrections on unjustified type).

(b) Layout - the way the material is arranged on the page

Clarity in layout leads to clarity in content because it requires clarity of thought.

A crowded page makes the material less readable. White space is not wasted space. It helps to focus attention on the text.

Lines of print that end at a natural pause in the sentence or at the end of a sentence are easier to read.

Generally, the longer the line, that is, the greater the number of words in it, the more difficult it is to read (UNESCO, 1963). The use of two and three columns on a page can help to avoid this (Lyman, 1976, p. 192). Frase et al. (1985, p. 104) suggest that line lengths of between 40 and 60 characters are suitable for most texts. Tinker (1963) recommends an optimum line length of between 50 to 60 characters.

Headings and sub-headings should be ranged from the left rather than centred and should be used together with a systematic use of space.

Sub-headings or summary statements in the left hand margin can help the reader scan for and select relevant material.

Tables and graphs are often poorly presented in distance education courses. Helpful advice on their construction is found in Hartley (1978) together with information on the construction of forms and questionnaires. As the filling in of questions is crucial in most distance education texts course writers and editors need to have some familiarity with good questionnaire design. Hartley's suggestions are as follows :

1. Be clear, simple in style and wording, careful in phrasing, and friendly in tone.

2. Use short, active, positive sentences with unambiguous meaning.

3. Use familiar words and abbreviations with clear unambiguous meanings and have pilot runs to check this.

4. Don't overinstruct in setting a question - it can confuse.

5. Ask questions about one thing at a time.

6. Organize the order in which things are mentioned to match the order in which they have to be carried out.

7. Use headings (they provide a context).

8. Consider alternatives to prose.

9. Provide adequate answer space with lines for writing on.

   - size - big enough (at least 8mm high)
   - location - next to the question
     - no big gaps (especially in columns of questions)
     - use interlinear rules to help in the location of the answer space
   - use rules (lines) not rows of dots for writing on
   - do not provide writing boxes with subdivisions (as in computer coding forms) as they are less legible and irritating to fill in (a blank space is better)
   - avoid separate columns for True/False answers

not

	True	False
1. text text text		✓
2. text text text text	✓	

rather

	Response
1. text text text	✗
2. text text text text	✓

10. Choose appropriate print

    - lower case print
    - preferably 10 point and at least 8 point

11. Don't save space. There should be the right proportions of text and blank space to make it visually attractive.

12. In leaving space for students to make notes or summaries just leaving a blank space may be unhelpful and unused. Provide lines to write on and preferably a simple skeleton outline to start the process.

(c) Illustrations

People who are not accustomed to seeing many pictures may have to learn to "read" them, that is, there are different levels of "pictorial literacy" (Fuglesang, 1982). Education in reading pictures is an informal process depending on pictorial stimulation in the environment. Schooling (learning to read and write) has little influence on pictorial perception if the general culture and home conditions do not "teach" the reading of pictures. Apart from Fuglesang's suggestions about illustrations, a useful source on this subject is **Illustrations for development** (McBean et al., 1980) which lists twenty two points of guidance for text illustrators.

Some of the important points about visual material in distance education texts are the following:

* One cannot assume that the following pictorial conventions are known by all readers:

  - depth in pictures will be recognized from cues such as perspective, relative height and size of objects, superimpositions, shadows and shading.
  - movement can be seen in "frozen movement".
  - the bottom of a picture is "down" and the top "up".
  - "cut-offs" do not mean dismemberment.
  - conventional symbols for such things as rain, impact ("seeing stars", direction (pointing arrows).
  - a sequence of pictures tells a story in time.

* Some types of illustrations are easier to "read" than others.

* Well printed photographs of people with the backgrounds painted out have been found to be the most easily understood by people unaccustomed to pictures (Fuglesang, 1982, pp. 166-171).

* Complete figures are better than incomplete ones.

* Pictures of people are more easily recognised than pictures of objects (even familiar objects). Pictures of people who look like and dress like the people for whom the reading material is intended are more easily understood (Haaland, 1984).

* The more "realistic" a drawing the more likely it is to be understood; the more simplified or stylised, the more difficult (UNESCO, 1963, p. 53; Fuglesang, 1982; Aitchison, 1980, p. 40).

- Colour printing does not significantly improve the ease with which pictures are "read". Where colour is used it should be "realistic" (UNESCO, 1963, p.52).

- Illustrations should be relevant to the text. Their purpose is to stimulate interest in the subject or to help explain it, not to decorate the page (UNESCO, 1963, pp. 51-53).

- Illustrations should be pretested with the target group to see if they convey the meaning they are intended to (Haaland, 1984; McBean et al., 1980).

- Labelling and captioning of illustrations aids classification and helps long term recall.

(d) Paper

Poor quality paper is cheaper but it does not facilitate the reading process. The better the quality of the paper used the clearer what is printed on it will be. It should also be thick or opaque enough to prevent print from showing through on the reverse side (Lyman, 1976, p. 193). Possibly under the influence of detergent advertising, many course publishers insist on using bond paper because of its whiteness even at the cost of the print showing through. There are many off white papers that have far greater a degree of opaqueness.

(e) Cover

Typography, layout and illustrations should be combined in such a way as to attract attention to a publication. A bold use of colour and shape can help to do this (Peckham Publishing Project, 1982).

(f) Size and format

Learners experience a feeling of satisfaction when completing a book. This is a compelling argument for having slim volumes, though for other motivational reasons they should still have the appearance of a book rather than of a pamphlet. A similar rationale lies behind the dividing of correspondence courses into small units (Aitchison, 1984). The usefulness of the well known People's workbook was (amongst other reasons) grossly hampered by its inordinately massive size that would have intimidated even fluent academic readers. It would have been far better as a small library of books. Another source draws attention, however, to the possible "insignificance" attributed to a small book (Laubach, 1978, p.75).

Page size determines the size of the overall visual display and should be related to the circumstances in which instructional materials are used.

It should be chosen **before** detailed planning of typography and layout and the thorough investigation that UNISA undertook before standardising on the A5 format is a model of sound procedure (even though one may not totally agree with their judgement).

Costs of different page sizes should also be considered, which was a strong consideration in the UNISA decision.

ISO (International Standards Organization) standard paper sizes should be used, preferably in the A series. These all have the ratio 1:1.414 which leads to easier interchange of dimensionally compatible units of text.

In practice one is likely to use the A4 or A5 size (or A3 for a double A4 spread). We personally incline to the A4 format because:

- it is the size of standard ruled writing paper
- files are readily available to hold documents and notes in this size
- the page is big enough to allow genuine scope for creative layout and illustrations (unlike A5 which is really too small).

The format and layout of the page requires rigorous advance planning because the component parts of instructional information are usually highly differentiated and varied and typographically more complex than ordinary text. Instructional text is **not** for continuous reading. Reading such text is interspersed by other activities hence it must be easy to find the place again. There must be **consistent** and trustworthy frames of reference in the typography, the positioning of functionally related parts, and in the sequential organization. The reader's question, 'Where am I supposed to go from here?' should be easily answered.

In planning the pages a **typographic reference grid** may be useful for mapping out the information area of the page. It assists in deciding on the arrangement of the parts in detail. Information on reference grids can be found in most layout and graphic design manuals.

(g) Numbering systems

The structure of a text requires signposting and one variety of signposting aids are numbers. Regretably many South African texts use numbering systems that, in the words of Orna (1985, p. 27), betray a:

misguided wish to impart to numbers more significance than they should be called on to carry. ... The ineffectiveness often lies in overcoding information to the extent that readers are confused rather than helped.

The majority of black students Aitchison tested (1980) had no understanding of how the 'decimal' numbering system commonly used in UNISA courses worked. One might add that this hierarchically organized numbering system has a number of problems in itself, namely:

- it is **cryptic**, for its principles are almost never explained by text or teacher, it is seldom self-explanatory, and its 'numbers' may look like decimals but are not (1.1 is not equal to 1.10). Its "precise construction does not guarantee accurate perception" (Waller, 1981, p. 148).

- it is **misleading**, for few courses or textbooks are genuinely hierarchical (and would probably be unsuitable for learning from if they were) and the numbering system may make the information look well organized when it is not.

- it is **authoritarian**, with an atmosphere of closedness and precision suggesting that the text can only be read in one way.

2. Language

The way in which a text is written, and the actual language in which it is written, are obvious contributors to the success of a course. Aspects considered below are:

(a) Formal or colloquial language
(b) Style
(c) Sentence structure
(d) Vocabulary
(e) Readability

(a) Formal or colloquial language

Apart from the difficulties inherent in reading a language other than one's own, the insistence on the use of standard rather than the familiar or colloquial form of the language can impede the progress of those who are struggling to improve their reading skills (French, 1980).

(b) Style

Laubach and Laubach in Towards World Literacy (1960) lay down guidelines for the style in which to write factual material for new literates, some of which is summarised in R.S. Laubach's address to the Literacy Conference convened by the HSRC in Johannesburg in 1978. His advance would benefit course writers at any level:

1. Be personal. Think of one particular new literate. Write as if you were speaking to him or her.

2. Write as an equal. Your reader, although less literate, is no less intelligent than you, ...

3. Try not to be condescending, not to "write down". Try not to write as you would to a child. You are writing for adults, who have worries and concerns as mature and serious as your own.

5. The order in which facts are presented is the most important factor to ensure clarity of communication. Start with a statement of need to get your reader interested. ...

8. Personalise. Use quotations frequently. Address the reader, "Do you know ...?" Have characters speak to one another.

(Laubach, 1978, pp. 72-73)

Other style guidelines listed by Laubach and Laubach (1960, pp. 201, 203) are:

- Use active voice and active verbs.

- Write in concrete terms.

A good example of the use of some of these guidelines is the South African magazine for new literates, Learn and Teach.

(c) Sentence structure

Generally speaking it is easier for a reader to grasp the meaning of a short simple sentence containing one idea than a long sentence with a complicated syntax (UNESCO, 1963, p. 43). This has nothing to do with the level of difficulty of the material that is being dealt with but with the way in which it is expressed. (Duffy (1985, p. 129) questions this because his attempts to rewrite material to fit this specification did not necessarily improve comprehension.) Using only simple sentences leads to monotony, so use sentences which vary in form and function. But have few sentences that contain more than one or two subordinate clauses.

Sentences should be in active voice (i.e. in which the subject of the sentence is acting), positive and assertive rather than in passive voice, negative and passive.

Negatives, especially double or treble ones, should be avoided. Negative qualifications can be used, however, for making a particular emphasis, and for correcting misconceptions. Double negatives in imperatives (e.g. 'Do not ... unless...') are actually easier to understand than single ones.

Sequence of events in a sentence should correspond to the temporal (time) order.

Should be clear and simple and should ask one thing at a time (most people are accustomed to questions asking one thing at a time).

(d) Vocabulary

A frequently repeated statement about the vocabulary that is recommended for literature for new literates is that adults have a higher reading potential because they understand a greater number of words used in oral language than children do (Arnold, 1982, p. 11). Sticht (1985) claims, however, that this is a conjecture and not necessarily a fact!

Few lists of words most commonly used by adults are available, even in the United States (Wangberg et al., 1984). If word frequency counts of written and spoken material are attempted (Laubach and Laubach, 1960, pp. 173-189) how relevant will they be to specific communities if they are based on data derived from the general population? Giffard (1978, p. 95) draws attention to the need for a basic word list for new literates

not of words that newly literates should known, but those that they do know, and which can be used to communicate effectively with them.

He suggests that one such list for each ethnic group in South Africa might be necessary. Fourie (1982, p. 24) points out that even this may not be sufficient because of regional differences in each language group.

Even with courses aimed at a higher level it is useful to work with a core vocabulary (such as those used as the defining vocabularies in modern 'English learner's' dictionaries. With modern wordprocessing packages it is easy enough to install these vocabularies into the spelling checker programs. This enables the course writer to identify words in the text that are not in the basic vocabulary list and to find simpler equivalents or to define them.

Abreviations should be avoided as readers easily forget what the author's abbreviations stand for.

Approximations using everyday words may be better than actual numbers or percentages. Thus, for example, the following could be used:

numerical values	**suitable form of words**
above 85%	almost all of ...
60% - 75%	rather more than half of ...
40% - 50%	nearly half of ...
15% - 35%	a part of ...
under 10%	a very small part of ...

If precision is required then the actual quantities can be given with the verbal quantifier, e.g. 'nearly half the group - 46 percent - said' or 'there was a distinct chance ($p < .06$) that ...'.

(e) Readability

There are various tests to assess the "readability" of any given text by measuring the number of difficult words (i.e. words with three or more syllables) against the sentence length in a passage of a set number of words or lines. The calculations of these formulae claim to show how easily people with different levels of reading skills would be able to understand the text within a given time.

Gilliland (1972) mentions that over one hundred and fifty formulae have been counted. The most well known are those of Flesch (1948) (who also evolved a formula for measuring the human interest potential of a text), Dale and Chall (1948), Gunning's "Fog index" (1952) and the more recent "SMOG" (Simple Measure of Gobbledegook) grading of McLaughlin (1969).

All have been criticised but they remain popular, perhaps because they are relatively easy to use. Gilliland (1972, p. 96) points out, for example, that reading difficulty is not necessarily caused only by word and sentence length (e.g. "grandfather" is a more familar word than many shorter ones and short sentences of unusual structure may also be more difficult than longer ones). He also points out that readability formulae,

> do not take into account motivational, situational or typographical factors, all of which have been shown to play an important part in determining the readability of a text.
>
> (Gilliland, 1972, p. 96)

Propositional density (the number and organization of ideas) is more important than the number of words or even the simplicity of the vocabulary.

Felker et al (1985, p. 55-56) claim that there is now consistent research evidence against using readability formulae as guidelines to successful written communication with adults and instead recommend the use of empirical evaluation techniques.

Other tests of readability include subjective assessments of a text, comprehension tests using questions and answers, the plotting or construction of charts and graphs using similar factors to those used in readability formulae, and the cloze procedures of Taylor (1953). This method involves removing a number of words (selected at random or at regular intervals) from a passage of text. The degree of ease with which readers can supply the missing words will determine the readability of the text. Gilliland points out that the advantage of this method is that it,

> measures the ability of a reader to use a variety of contextual interrelationships in completing any particular blank. It deals not only with specific word meanings but also the ability of the reader to respond to his own language pattern.
>
> (Gilliland, 1972, p. 103)

In addition, it tests reader and text simultaneously. Gilliland suggests that an example of a cloze tests taken from the book and placed at the beginning and end of it might enable teachers to match books to individual learners quickly and reliably (Gilliland, 1972, p. 107). Perhaps courses for newly literate adults could be provided with similar tests which would enable them to assess whether the text's readability level matched their own literacy level. But use of this technique would have to be learnt.

One of the problems of testing readability levels in South Africa is that hardly any standardised reading tests exist here and those that do are based on overseas models designed for native English speakers.

7. USING DISTANCE EDUCATION TEXTS

Distance education may be ripe for a qualitative leap if it can make effective use of the new technology of text production and benefit from the last few decades of research in adult learning and information design. There are also sufficient models (both good and bad) to stimulate new ideas. But courses and texts have to be used and problems associated with use (which include those of politics, ideology, language, culture and contextualisation) loom large in our situation.

In a society like ours there are many dilemmas and forced choices. In our field, for instance should so much effort be put into designing better texts that make fewer assumptions about their readers or should we rather insist (usually unsuccesfully) that we should have a schooling system that trains learners to cope with any kind of text. Better text design is a question that is inextricably linked to the question of increasing general literacy in society.

In the way that distance education texts are used we may need to move away from the now old fashioned idea of the individual silent reader tied to his book (still legally insisted on by most correspondence courses in which the student has to sign a document promising that he or she will be the only person to use the material). We may have to accept that the future may be rather more like the past. Olson (1985, p.11) asks:

> Why not go back, for some situations at least, to the manuscript era when one copy of the book was chained to the pulpit, and it was assumed that the average reader would often need a clergyman to help in understanding it correctly. The teacher's role in this scenario is to show the student how to correctly interpret the text.

We need to accept that distance education may need to be more closely linked to social and political movements and groups (and particularly in South Africa, to the black trade unions) for it is in these contexts that texts will be used.

Distance education courses themselves will need to provide guidance on the medium itself, so that it becomes transparent to the user and not, as at present with many courses, an opaque fog of verbiage and mystification. The print medium must become handlable by many more people as must the structuring of instructional text (Aitchison, 1982).

> The notion of trying out a newly written piece of material on a sample of the intended audience to see if they understand it is simply a foreign concept and untried technique for most.
>
> (Felker et al, 1985, p. 48)

Writers and publishers need to field test their material. They need to have it evaluated by their colleagues. This cannot be done if institutions continue with their tight-fisted, mean and ultimately self-defeating unwillingness to part with their material to interested parties unless large sums of money change hands.

Although this paper has devoted much attention to how instructional text can be improved it does not address the problem that we may simply be reinforcing a consumer attitude towards educational print on the part of readers and learners. Particularly in South Africa, with the most gross educational discrimination against the majority of its people an ever present incentive to idealistic educational organizations to "supply" better facilities and materials, we need to consider that there are other alternatives (Mace, 1979; Aitchison, 1986) that would lead to a greater interaction between writers and readers, editors and learners, in which all parties contribute towards the liberation that education is supposed to bring.

Further, this paper has avoided looking at the content, instructional and ideological, of distance education courses. Most extant courses attempt to make students more capable of coping within their own society as it is. They implicitly assume that the provision of equal opportunities will level out inequalities and discrimination in society and that the appropriate level of 'literacy' is the key to the equal opportunities door. They do not address the problem of societies that are structured in a way that forces some to suffer while others thrive and in which literacy and education are used as forms of social control. The courses that make groups of people more aware of how their society functions in order that they may change it to effect a more equitable distribution of resources are still in their infancy.

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DISTANCE EDUCATION AND THE REGIME OF ACADEMIC LITERACY

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ABSTRACT

A critical look at some of the (often hidden) assumptions about what counts for 'literacy' and educated academic discourse in the context of distance education in South Africa of today

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DISTANCE EDUCATION AND THE DEMAND FOR "LITERACY"

Distance education used to be called correspondence education. The change in terminology, whilst opening the door for the purveyors of radios, television sets and home computers, does two unfortunate things:

* it masks the total dominance of the skills of reading and writing in much distance education, and

* it masks the reality that most distance education users are forced by barriers of poverty and educational qualifications (and in South Africa racially based discrimination) to use this method rather than traditional face to face teacher instruction.

"Distance education" is a sanitized term that suggests geographical distance as the problem to be overcome. In reality, and certainly in South Africa, distance is seldom the real problem and it is likely that the majority of correspondence students in South Africa live in relative proximity to their distance education institutions or branches thereof and certainly in proximity to traditional educational institutions of some kind.

What I would see, given the constraints that turn people towards enrolling in a distance education course, as a far deeper problem is the relationship between such students' learning needs and the peculiar 'literacy' demands that are made upon them. This is not to say that such demands are not made in all the educational institutions familar to us. They are. But in traditional, face to face instruction and (perhaps with an impact we grossly underestimate) in the hidden, largely social, curriculum of educational institutions, the confrontation with academic literacy in its pure written form is muted. An example of a traditional instructional form that conveys messages and reassurances that are largely absent in correspondence education is the lecture. Its 'hidden curriculum' has been aptly described by Howe who sees the lecture as having value to all concerned by meeting needs that are of a broadly social, and partly ritual nature. For instance, for students the lecture provides a context for learning in which mercifully few difficult individual decisions have to be made and in which there are few of the distractions that may be present when a student attempts to study on his own. Learning is a private, subjective matter in the main, and the student may feel isolated and lonely. The lecture can be regarded as having some attributes of social occasion and one in which the student is reassured by the presence of others who share some of his problems and his aspirations. Furthermore, we can regard lectures as fulfilling the function of putting learning on display. It is apparent that the student is properly engaged in the business of learning, that the teacher is meeting his obligation to communicate knowledge and that the institution is playing its role as a market-place for education. All those who are concerned with learning thereby receive some kind of concrete reassurance that all is well.

At this stage some similar self reassurance and congratulation of ourselves is in order as we have all reached a level where we can understand and participate in the higher reaches of South African university and indeed international academic discourse. We are skilled in reading and writing and nearly all of us were rich enough and had the right educational qualifications to enjoy face to face instruction at a traditional university.

We are literate people, not merely alphabetisme but lettre (to use the finer distinctions of the French). We are not just the mechanics of reading and writing but people who are alive to the challenge of language. And it is precisely this fact that constitutes a problem for me. What constitutes our literacy/letteredness? What connection does it have to the literacy that is a prerequisite to enable people (and in the South African context, especially black people) to participate in distance education.

SOUTH AFRICAN ILLITERACY

South Africa is a curious society, literacy wise. It is estimated that at least 30% of the South African population is illiterate and this probably means some 8 or 9 million people (Wedepohl, 1984, pp. 17, 26). By comparison, Russia claims a illiteracy rate of 0.3% and even if this figure is a fraud (Fisher, 1972), one might facetiously say that it indicates that the success of the total onslaught could only be good news to South's Africa's illiterates. Amomg blacks the illiteracy rate is probably as high as 46% (Ellis, 1980, p. 60). By comparison, amongst whites, there is a higher percentage of the young adult population in institutions of higher education than in most other countries of the world.

South Africa has an education crisis which is being met with varying kinds of conscious and conscientious response. Examples at the extremes of the educational field would be the millions now being invested in academic support programmes for black students at universities and the advertisements on South African television on behalf of a campaign against illiteracy. I believe that we need to reflect on such interventions and particularly on distance education ones. We need to ask what they are doing and on what we distance educators are doing and to relate our efforts both to the South African context of millions of complete illiterates and to recent thinking on the nature of literacy. We should raise questions on the relationship between basic literacy or alphabetisation and academic literacy, because we need to uncover the links between them and explore the meaning of being an educator totally dependent on the printed word in a country which has illiteracy and higher education living in typically South African segregated proximity to one other.

One purpose of this paper is to look at the academic literacy we inevitably represent and ask what relevance and meaning it has for the bulk of the people in South Africa. In doing so I am not subscribing to the delusion that South Africa is both a first and third world country and that 'academic standards' appropriate to the 'first world' are not suitable to those parts of it that have 'third world' conditions. As Lelyveld (1986, p. 79), remarks of those who describe the "black" areas of South Africa as being part of the "third world":

> As a metaphor it beats "homelands" because it says they are not only in another country but in another world; cholera epidemics or children dying of hunger in a wealthy land are not therefore a disgrace but examples of chronic "third world" problems. South Africa can even be pictured as a "microcosm" of the whole North-South dichotomy, an image that provides several kinds of psychic balm: The whites can identify themselves with the first world, which they tend to think of in racial terms; they can find support for the view that their country's problems are not susceptible to short term resolution or even assert, as a Cabinet minister once did, that South Africa (meaning the mythical white country) was forking up more aid to the third world (meaning the majority of its people) than any other developed country.

But even if we, being soundly trained in the human crafts of reading and writing, and employed to think, can avoid glib categorisation of South Africa's political, social and educational inequalities as being merely echoes of planetary dissonances, what are we to make of literacy in education today, given that making people (especially black people) literate is the indispensible entrance qualification for most distance education in South Africa. (Those from more salubrious planets where governments and educational administrations at least give the pretence of being servants of all their people may say "What about about radio and television?". Edward French's Human Sciences Research Council report, **The Potential of television in the promotion of adult literacy** (1986) showed that it was not a viable prospect largely because of political and organisational problems.

EXPERIENCES OF THE LITERATE

My own experience in distance education has been with three South African institutions, all of some renown, namely, the South African Committee for Higher Education Trust (SACHED), the Theological Education by Extension College (TEE College), and the University of South Africa (UNISA). I wrote matriculation level English texts for SACHED, Standard 6 level ones for TEE College (and also edited texts from this level to that of post-matric Diploma) and studied for an education Diploma with UNISA. I have also privately tutored blacks students doing UNISA education courses.

Luckily I have also had the opportunity to teach similar courses on a face to face basis to both black and white students and the point of cataloguing this experience is that it alerted me to the amazing differences between face to face lecturing and distance teaching. Invariably the distance instructional text was more academic, more dense, more complex, more difficult, more demanding and perhaps most important, more alien to the student. This was true at all the levels of instruction. I once checked the validity of these generalisations by basing an entire year's course of traditional lectures in the Old Testament at Diploma level on a Standard 6 level course I had written as a correspondence text for TEE College. My hypothesis was confirmed when the results for this externally examined course were as good as, if not slighly superior to, that of the previous year.

What is it about the regime of academic literacy that creates such phenomena? What motivation drives course writers to over academize and overwrite and generally overdo it? What are the conventions that will make educators prepare written texts in a totally different way from preparing a spoken lecture? Before preening ourselves at the thought that Open University, UNISA, SACHED, and TEE College texts will gradually replace the decidely inferior offerings of ordinary lecturers, we have to ask what intolerable burdens we are imposing on learners, particularly when the burdens may in fact bear no relation to the real learning tasks. What is even more curious is that my experience of distance educators is that, generally speaking, they are more conscious of what they do as educators than their traditional institution colleagues.

These experiences suggest to me that literacy (at all levels) is a problem. From the reaction of people to this suggestion it is also suggested that the hegemony of literacy is so strong that most people, and especially academics find it nearly impossible to problematise it. And as a complementary point, precious little open discussion takes place on the need to enlighten the general populace about the nature of the regime of literacy.

THE HEGEMONY OF LITERACY

Hegemony, as all those who have read their Gramsci will know, is achieved when a provisional alliance of certain social groups exerts a consensus which makes the power of the dominant group appear both natural and legitimate. Hegemony can, however, only be maintained by the won consent of the dominated. It is therefore, like consensus, subject to renegotiation and ongoing redefinition. Also, the consensus may be broken as the ideologies of the subordinate cannot always be accommodated.

We live in a literate world, and in planetary terms, the very first of literate worlds, that of Academia. We play a very important part in making the rule of the literate seem natural and inevitable. What is our role as commissioned officers in the cultural army of academic literacy? How are we able to serve a culture that seems so ready to tolerate massive illiteracy co-existing with it (though its procedures may well direct the unlettered to suitable dumping grounds in the "Third World").

THE REGIME OF ACADEMIC LITERACY

What is this literacy, this entrance qualification into most of our distance education courses and into our world of academic discourse, that we want our students to possess? Is it a literacy that gives you power over the world, a literacy that has all the dynamic attributes suggested by Pattison (1982, p. x):

> Literacy is something bigger and better than mechanical skill in reading and writing. Literacy is a potent form of consciousness. Once possessed, it makes us productive. It irradiates the universe we have created. It remakes our lives. It gives us power for good and ill - more often for ill in proportion as we misunderstand it.

In reality, academic literacy, as purveyed to students through most South African distance education courses is about writing essays or, in more popular courses depending on computer marking, doing a kind of crossword puzzle/code-breaking of the text to find the right answers for multiple choice questions. Remedial or student support courses also aim at these same behavioural objectives - writing "correctly" according to the norms of the standard academic paper. It is a very rational Apollinarian endeavour. Unkinder critics would describe it as mechanical. It is clearly assumed by all that correct standard ways of reading and writing exist, should be followed, and can be taught. Yet the connection of these skills of writing academic discourse with the power of genuine knowledge and with real culture is minimal. Vital discourse and writing in South Africa today is certainly not taught at universities or technikons. Live culture is found in black society in poetry, in the township drama group, and in the rhetoric and exhaltation of the UDF rally. The very contrast between the university (distance or otherwise) on the hill and the black township illuminates more clearly than anything else that what we often take to be the qualities inherent to literacy itself are above all cultural. They are in fact "the conventions of literate practice in particular societies.' (Street, 1984, p. 4) and in our case are based on the 'essay-text' form of literacy, a narrow, culture-specific literacy practice that assumes and is embedded in a social formation in which it plays a significant part (Street, 1984, pp. 40-44).

Hence it may be that at the heart of our texts and courses is an assumption (and an unexamined one at that) that language is a highly complicated medium through which it is difficult to see and express the truth. This can be done only after the most rigorous training in higher order reading and writing skills, of which the said course writers are of course the most agile performers. I suspect that this belief is largely foreign to most people in South Africa, and particularly for militant blacks for whom language is synonymous with action.

As the political hegemony of the ruling classes in South Africa declines it is possible that the universal superiority assumed for our essayist techniques and practices will also be threatened and the authority given in our society to texts will begin to be demystified.

I believe that we should start the demystifying process ourselves and seriously consider recent writings on literacy and letterdness in which it is no longer considered obvious that "in the words of 1066 And All That, all types of literacy are a GOOD THING." (Dargie, 1986, p. 249).

Consider the following bald statements as problems to be worked on:

- If making people literate does not enable them to control their world (and their university); if it does not let a live culture thrive; if it merely allows a select few into somebody else's world, then being literate is, in the South African context, making a concordat with the enemy.

- If literacy, in its "higher forms, is seen as the ritual by which one enters the powerful and "superior" world of the white bureaucrats and pen pushers we program future generations to an essentially ritualistic engagement with the dominant language of the literate.

It could be a major disaster if distance education programmes, ostensibly aimed at broadening educational opportunities, in fact function as manpower clearing houses in which loyal new functionaries for the civil, educational and ecclesiastical bureaucracies are formed and selected.

Regretably much of the motivation behind major literacy and basic education campaigns in the last three decades has been to increase the number of eligibles from whom selection into the higher education institutions and bureaucracies can be made, rather than that of creating an educated workforce or populace. The other main motivation has been to impress multinational companies who believe that there is a correlation between literacy rates and their ability to sell consumer durables (Street, 1984, p. 194).

WHAT IS LITERACY?

A current UNESCO definition describes literacy as:

> The ability to read and write. The concept sometimes includes the ability to calculate.
> (Titmus et al, 1979, p. 52)

Other definitions abound, but basically three clear conceptions of literacy emerge:

(a) The ability to read, and sometimes to write, in any language (or the appropriate lingua franca)

(b) The ability to read and write well enough to function normally within one's society. Such functionally literate people are nastily described by Hudson (1977, p. xvi) as being "literate enough to fill in forms, read street signs and see what is on the label of a medicine bottle, but not sufficiently at home with language to prevent themselves from being drugged and seduced by commercial and political propaganda."

(c) A cultured, internal, way of life literacy, best defined by quotation:

> A living relationship between the skills of reading and writing and the best thought of a particular culture ... an ability to deal with language critically and profoundly
> (Pattison, 1982, pp. 120, 186)
>
> The ability to use the full resources of the language, to listen and read with comprehension and sensitivity, and to speak and write easily and with clarity and grace
> (Hudson, 1977, p. xvi)
>
> Internal literacy is a way of life, thought and expression, a means of operation in daily life, a means of communication between persons regardless of proximity, i.e. literacy as a first resort.
> (Cope, 1986, p. 152)

This cultured, internalized literacy has traditionally required special development in which there is rigorous training in the study of literature and the manipulation of language. Such development is usually given only to those selected to wield power in a society. Literacy of this sort is power and a means of controlling the world..

In looking at these definitions it is clear that in an obvious sense they are developmental, the one builds upon the other. But in another sense they are contradictory or simply different. It is this contradictoriness within literacy that is the hub of current debate about literacy education and its relationship to social and economic development, particularly in the poor parts of the world. Literacy is now increasingly seen in the context of culture and power relations. As Wayne O'Neil remarked in the Harvard Educational Review of May 1970,

> Proper literacy should extend a man's control over his life and environment and allow him to continue to deal rationally and in words with his life and decisions. Improperly it reduces and destroys his control. He is deluded by the veneer of control he has been granted, not minding that he has lost everything else.

Post Second World War literacy campaigns, particularly those in the sixties, were part and parcel of an attempt by the rich Western powers to modernize their colonial and neo-colonial territories. Verne's judgement on the whole process concludes that:

> Since 1965 literacy teaching has functionally served the cause of industrialization while simultaneously serving to justify the existence of two sectors in the Third World: one in which poverty has been modernized, the other in which poverty has been impoverished. ...
>
> The most serious political problem in the next 20 years is no longer going to be that of providing a minimum of education for all, nor of providing a substitute for schooling, nor even of providing limited education-credits to be used as the individual pleases throughout his lifetime. The problem is going to be that of bringing together the political conditions capable of putting a stop to the overconsumption of schooling by the few, the overpayment of those possessing diplomas, and of breaking their monopoly
>
> (Verne, 1981, pp. 286, 292-293)

Literacy in the cause of modernization was avidly propagated by UNESCO in the sixties and was adopted as a personal crusade by the Shah of Persia. Teheran became a centre for literacy studies. The best statement of this conception of literacy is that of the Iranian Literacy Project of 1970. Functional literacy is :

> technical and cultural advancement activity integrating, in a synchronized process, vocational training, scientific acculturation, mathematical instruction, civic and socio-economic education, and learning to read and write. Thgis process is designed to improve the productivity of workers, to facilitate their integration into a rapidly modernizing society, and to accelerate development.
>
> (quoted in Verne, 1981, p. 299)

That something was wrong with the theory is evident from what happened to the Shah and the economic track record of most "developing countries" (according to the criteria of the First World industrial powers). The reasons for the failure are well documented in Verne (1981), Galtung (1981), and by Street (1982) (the latter being particularly good in explaining how the people of Iran were, to use Verne's phrase, 'robbed of their own discourse' in the process of industrialization and alphabetisation and quite naturally rebelled). On a more anecdotal or local level Pattison (1982) and Sjostrom and Sjostrom 1983) also offer insights.

Current South African literacy programmes in industry and in the Adult Centres run by the Department of Education and Training indicate that their sponsors seem intent on emulating the career of the Shah. But, so do many universities. Many of the assumptions that can be detected in distance education programmes reflect, in however superior polished a mirror, the same mechanical and functionalist approach to literacy at a tertiary level.

Assumptions that permeate these programmes and the materials they use include:

* Literacy is the mechanical skill of reading and writing (in an official language).

* Individuals who are literate are more cultured and civilized than those who are not.

* The skills of reading and writing should be propagated among "disadvantaged" people as a first stage in their economic and social upliftment and as a necessary precondition for their effective use of Western technology (including the word manipulating technologies of the academy).

* The skills of reading and writing, properly learned, will protect democracy (when it arrives), rational thought, and ensure that any new black government will keep the aeroplanes flying on time (white middle class people no longer have any particular investment in the trains running on time as only black people and railway employeees use them) and lubricate the flow of multinational's profits back home.

* Understanding the form or structure of texts or academic discourse is of more importance than understanding meaning or ideas. Verne has a description of precisely this same preoccupation in basic literacy training as an aid to industrialization:

> Everyone now knows that the best way for an illiterate peasant to achieve integration into the production process and to form an idea of his place in the production chain is to internalize the linear nature of the printed text, to acquire the ability to see things laterally and to equip himself with the spatial scheme necessary in order to read and write. Industrialists have fully understood that the medium constitutes the most important part of the message. The ideological content of the

> text is of little importance so long as the worker internalizes this linearity and its extensions in industrialized space. He will therefore all the more effectively occupy his place in the production process, constituting a letter that is void of meaning in a line that is alone capable of having any meaning.
>
> (Verne, 1981, p. 295)

Positively classic examples of this can be found in many UNISA first year education courses in which everything from the nonsensical overuse of a pretentious 'decimal' numbering system to multiple choice questions punched out on computer cards requiring not understanding of meaning but the ability to find the right combination of words and phrases in a verbose text. (I once had to confess in despair to a black student who asked me to explain what some ten pages of a UNISA education text meant that I thought the ten pages of mind fogging jargon in fact said "In most countries today most children have some form of schooling."

My manual on using textbooks (Aitchison, 1982), designed for tertiary students, is, despite its excellent intentions, a typical example of this near pathological obsession with structure in text at the expense of content and ideas.

Are we distance educators, in striving to produce "highly literate graduates", espousing an intellectual technology that will, adapting a point made by Verne, 'unavoidably render 95% of humanity illiterate'. Is what we do enabling or disabling? Paradoxically, even if distance education works well it may ultimately be counter productive precisely because it has produced a band of "educated" middlemen, enabled by distance institutions to take up 'professional occupations' wherin they lord it over their less lettred brethren. It becomes yer another exercise of power by the regime of literacy on the disadvantaged. It becomes a professionally planned and administered ritual that has as its purpose the internalization of an ideology.

Pattison (1982) in the preface to his book On literacy concludes, in opposition to this mechanically and functionally based 'modernization theory of literacy' that literacy that genuinely empowers and liberates .s foremost a consciousness of the problems posed by language and only secondarily skill in the technologies by which such consciousness is expressed in a culture. It follows that literacy is always a compound of cultural attitudes, concepts about language and available technologies. Literacy is therefore a culturally relative matter. Imposition of narrow white Western ideas about literacy on others is not therefore, automatically beneficial. Propagandists for reconstructing the minds and attitudes of black South Africans, be they profiteering industrialists devouring books on how to motivate your black workers or benign university administrators planning for a cosily integrated future, need to rexamine their assumptions when talking of literacy. Are they simply the functionaries of a regime of literacy that is fundamentally anti-democratic and elitist.

WHOSE WORLD OF LITERACY?

Pattison makes the interesting observation on the early Christian attitude to to the literacy of the classical world, that:

> From the beginning Christianity was the religion of the popular, spoken language. The early Church opposed the formal systems of written and rhetorical language because, consciously or not, it recognized that a world perceived through the medium of the stylized language of the bureacracy or the polished rhetoric of the scholars and law courts could never be a Christian world.
>
> (Pattison, 1982, p. 69)

Transposing this observation to South Africa, 1987, 'Can a world perceived through the medium of academic discourse and its pedagogues, even when spread a bit more widely by distance educators, be the world of a democratic, egalitarian South Africa?' What signs are there that a "knowledge reform" is about to take place "whereby the monopolizers of knowledge-production, such as universities, experts, etc. are willing to distribute the tools of knowledge better, and people in general dare respect their own insights more" (Galtung, 1981, p. 285).

Is there hope of a literacy at all levels that is liberatory? I believe that the potential for it is there. I agree with Goodman (1985, p. 389) that "literacy does not in itself produce power, It is not in itself liberating. It does not in itself change values, aspirations, power relationships, cultures and world views." It is not sufficient to do any of these things. But it is a necessary part of cultural, economic and political change. It is therefore of prime importance for all educational institutions and particularly distance learning ones to abandon elitist stances and help in the realisation of the historical possibility of the full use of literacy by the mass of our people.

> We are all prisoners of our ignorance. By opening new worlds of information and ideas for us, literacy is one of the chief means of human liberation. John Bunyan, Malcolm X, and centuries of prisoners whose minds have come alive from the touch of literacy bear witness to the almost mystical power of the Word to transform our lives. ... I see no way out of the obvious lesson of the prisoner phenomenon: literacy can transform the mind and life of man.
>
> (Pattison, 1982, p. 135)

I offer those words from Pattison. Is it possible for educators to betray the regime of literacy and to side with the forces of literacy for liberation? I do not believe it will be easy, for educational institutions owe their longevity in part to having pragmatic

relationships with dominant regimes. But I believe it is in our own interests to make the slogan "alfabetzacion es liberacion!" our own. We, literate as we are, are all prisoners of ignorance along with our unalphabetised and unlettered brethren, not merely metaphorically, but under the state of emergency, in the year 1987, in reality as well.

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THE ISSUES OF EDUCATIONAL TECHNOLOGY AND CURRICULUM DESIGN

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Defining Terms

Last year, when I was on a study tour looking at "Educational Technology" in Canada and America I was reinforced with this term as we use it in Australia: that is, the application of communication and computer technology to teaching and learning. However, when I got to England and was talking to a very prestigious person and mentioned the term "educational technology" he cut me short, very politely, and asked me what I meant. It soon became clear that in England, or at any rate within the ambit in which this person operated (which is quite extensive) the term referred to the 'technicalities' of education such as the pedagogical theories, matters of cognition and such like. It quite threw me off balance for a while. When we came to some common ground of understanding we were able to have a useful discourse. With that preamble, I would like to state, that my definition of Ed. Tech. is concerned with the electronic media that encompasses both information and computer technology as it can be used in education, that is, the reflex roles of teaching and learning.

Introduction

Actually, the application to 'education' of these technologies as against the application to commerce and industry, as far as the process is concerned, is no different. Configurations in any of these formats are just digitised data that is manipulated from point A to point B by means of sophisticated switching devices and electronic pulses controlled by a conglomeration of micro chips! In other words, computers and their multitude of peripherals are but TOOLS for us human beings and must always be kept in that perspective.

The increasing awareness of the various options of teaching and learning by means of electronic media is being reflected in the holding of forums such as this. Students, too are interested in alternative means of learning. However, the teachers and administrators have the prerogative of setting the policies of course delivery styles. Its a chicken and egg situation - the institutions don't want to spend limited resources on innovative developments in instructional design when there is no apparent justification in student numbers. There are potential students who would like the option of alternative styles of distant education if they existed. The sad thing is that more than enough technological know how does exist to set up creative use of electronic media for delivering education but somehow it doesn't seem to happen and this is true in industrial countries as much as non-industrial ones. There are a few

examples of 'pilot' studies within Universities and other institutions where some subjects are taught thus, but these are the exception rather than the rule. On the whole education lags behind industry by many years. The status quo of print-based correspondence courses continues. How can we break this tension?

By means of yet another tension which exists like a counter weight and that is the tension between the ideal of universal access to higher education and that of maintaining excellence (G. Saville, 1975). This paper will seek to delineate various issues that bear upon the use of ed.tech. in curriculum development, identify the many delivery options that ed. tech. offers, present one model (by no means the definitive one) for selecting a course to start the change-over process and identify some significant advantages of using electronic media either in addition to print media or instead of it.

I Issues that bear upon the use of educational technology

I see educational technology as being concerned with how teaching and learning is delivered and received other than by the face-to-face mode or merely print-based mode. For instance, if a course curriculum included (i) a given set of manual skills to be developed (ii) a set of lectures and (iii) a range of assessments, then a course designer in considering the development of the Curriculum in terms of using electronic media,would need to address such issues as:

(i) The pedagogical aspects, such as the level of skills and knowledge of the course in terms of:

1.1 the students' prerequisite skills & knowledge

1.2 the skills & knowledge aims and objectives of the course

1.3 the level of cognitive and practical skills at which the course is pitched, in the oft quoted terms of Bloom:

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Conceptualisation (evaluation)

The pedagogical rationale has not changed to any extent. If any change has occurred, it is in the exponential increase in the amount of information and knowledge that encompasses a course. Neither the teaching nor learning encounter can fully attend to to this as discreet 'bits of information' but knowing how to retrieve, store and access relevant information as and when needed is the essence of THE technology within its dynamic mediating role. Here too, though, there are certain variables that might well influence

instructional design decisions besides the intrinsic pedagogy referred to above.'

(2) Fundamental concepts that underlie the reasons for mounting the course in terms of:

2.1 Who 'owns' the course ... has asked for it to be run?

2.2 Why is it needed?

2.3 What are the behavioural attitudes being planned?

2.4 What is the profile of the student audience?

2.5 content:

(i) practical 'skills'

(ii) theoretical knowledge

2.6 need and demand of the course by:

(i) students

(ii) industry

2.7 level of qualifications of the students on entry

2.8 The age of students (each having different motivations):

(i) mature aged students

(ii) school leavers

2.9 Articulation: Will the course qualify the student adequately (in knowledge, understanding as well as the 'piece of paper' that goes with it on completion) to 'plug in' to further studies as was the intention of the course / subject ?

(3) The level of the courses (based on the Australian system):

3.1 Kindergarten to Yr 12:

Limited self directedness, usually entails parental guidance although more self-paced learning with CAI (micros) is possible.

(i) Main advantage is faster feedback for students and improved communication with the teacher - improved learning pace.

(ii) More scope to 'communicate' with peers and 'rest of world' via electronic mail.

3.2 Vocational - high practical skills component:

Full student autonomy and flexibility over study schedule. Students' economic ability to buy hardware and software and ability to pay connect time costs.

(i) Less time spent travelling to learning centre - facilities might even be on work site

(ii) Practical component done partly under supervision at work site. (Note: it is important to build in skill training at college as well to overcome too narrow a field of operation (as often occurs) at work sites.

3.3 Higher Education: university or other college (in Australia (CAE - College of Advanced Education):

Full student autonomy and flexibility over study schedule. Students' economic ability to buy hardware and software and ability to pay connect time costs.

Different delivery issues for Arts oriented courses (greater amount of reading, less

'practicals' but a need for face-to-face discourse via tutorials / seminars) compared to Science oriented courses (like vocational courses, have a high practical skill component (laboratory work).

4 The institution:

4.1 Physical design features:

(i) a central campus or regional facilities

(ii) ratio of teachers to students

(iii) admin. backup facilities (typing,data in-puting etc.)

(iv) budgeting constraints - yes, we all experience them but often creative thinking can be used to overcome some of these.

(v) the logistics of assessment procedures for each credit course - is their flexibility, validity, reliability?

4.2 Mode of delivery at the institution: totally distance education - as at UNISA, totally 'face-to-face' or a dual mode with a

'department' of extension / continuing education existing to a greater or lesser extent within a traditionall 'face-to-face' institution. The 'slice of the economic cake' it manages to attract is often disproportionate to its activities, usually neagtively biased, with its competitor!

4.3 A mix of all the above, perhaps the utilisation of existing networks, such as. libraries and other educational facilities -a rationalisation of resources (or more specifically a pooling of resources.

(5) The infra-structure of the organisation which would relate to:

5.1 Knowledge of Ed.Tech staff: the spread and depth of expertise/knowledge of technology' and computer literacy.

5.2 Resource facilities available:

(i) audio/ t.v. studios

(ii) editing facilities

(iii) Computer hardware & software (including

student use ratio)

(iv) national networking / data bases available to access

(v) transmission facilities: land lines; modems, telephone connections.

5.3. Administrative backup: in preparation of resource material, delivery / collection systems, information systems. Innovative admin. staff??

(6) Corporate and public utilities support

6.1 the extent to which the educational institution can gain economic concessions from relevant providers such as:

(i) telecom (teleconferencing / modem use)
data transmission - electronic mail
. satellite broadcasting
. facsimile machine use

(7) Credibility of qualifications:

7.1 acceptance by students

7.2 acceptance by employers

7.3 international acceptance

For instance, whilst in British Columbia, Canada, a student at Simon Fraser University told me that he, like many other students, camped out because he couldn't afford the residential costs. This university, a modern day version of an Aztec temple is perched on top of a mountain, often shrouded in clouds, some distance away from the main residential area of Vancouver. In winter it experiences deep snow (I was there last summer and the weather was glorious). I hardly believed such Spartanism was possible, but he assured me it was. when I asked him why he didn't enrol in an external programme (they have many) he indicated he wasn't aware of the range of courses and then added: "anyway, these sorts of courses are not seen as any good compared to 'ordinary' courses (meaning face-to-face courses). There is obviously a communication gap on both sides there, not only between the students and their university but also between the university and the employers of their graduates. This is not a problem peculiar, I think, to Simon Fraser University.

II Delivery Options (other than totally that of print mode):

(1) broadcasting (wide coverage from a central point):

(i) television with or without satellite transmission.

(ii) radio

(2) Narrowcast:

(i) teleconferencing

(ii) television conferencing

(iii) closed circuit television

3.3 CAI: Computer Assisted Instruction (including self-paced learning).

(i) specific software that runs off standalone PC's - within a classroom situation and used either for remedial or 'enrichment' of students in a group

(ii) for individual students in a library, individual learning centre or at home.

(iii) networked from one computer to several terminals within a group situation with a teacher able to monitor each student's progress.

(iv) Interactive laserdiscs fits in here, A new exciting medium which encompasses computers, video, slides, audio and text. It lends itself admirably to both self-paced learning and group learning use.

(4) CML: Computer Managed Learning

Involves the use of main frame computers with multiple terminals. The emphasis is on the teacher who 'manages' the learning situation by various strategies via his/her curriculum design. This may include a CAI sequence or a video or any combination of teaching strategies that the teacher (designer) builds into the course. This is a very comprehensive means of tying in education and technology and good old fashioned face-to-face learning where it is the most appropriate alternative.

The release of the teacher from the administrative side of assessment leaves him/her free to spend more time on design. The cycle could start in assessment, then through the other phases. This is not the ideal way of redesigning a course but is nevertheless a

pragmatic approach.

The implications of educational technology for Curriculum development concerns what teaching and learning is planned and how it can takes place (from the point of view of both teachers and students). Perhaps instructional_design could be the description that incorporates both aspects of this continuum. Each of these options have very particular instructional design considerations in their own media right and also in terms of their use in conjunction with other media. In curriculum development, the use of any of these media needs to be considered very carefully in terms of:

(i) student learning styles

(ii) time of delivery of the media, e.g. broadcast schedules

(iii) accessability of the hardware and software, on a national basis and also, in economic terms on a student basis.

(iv) How many students are to view the particular media at any given time (individual or group viewing?)

(v) Will there be a teacher in attendance (in group viewing) to guide the students through the work? or will a 'facilitator' be there mainly for administaration organisation?

Even the assessment aspect is not far removed from this issue. What bearing does this part (the media) have on the

overall assessment plan? A close monitoring of assessment objectives will reveal any shortcomings of the WHAT and in turn link in with the HOW.

III One model for breaking the print-based status quo

Since print based delivery has for many decades delivered education reflecting these pedagogical concerns, why should we change? Perhaps one can answer this by the comment - that's human nature, change and innovation is part of our make up.

We are all faced with the challenge of how best to switch from the tried and true print-based communications for 'distant education' to the 'new toys' of electronic media. There are some who have their eyes shut tight and are desperately wishing that when they open them technology is all gone away - a bad dream, a fad, but alas (for them!) this is not so - it's here to stay so how can we face up to it, ease into it while we keep the ship afloat with the existing system? Some critical considerations are:

(1) What changes in traditional academic teaching styles will occur - lecture delivery, availability for student consultation, computer interaction with students?

(2) How will new attendance patterns effect timetable scheduling?

(3) What changes will be needed in on-campus attendance? Building in some on-campus discussion groups, short residentials or regional centres as meeting places.

(4) Re-allocation of an institution's resources to include computer hardware and software rather than bricks and motar?

(5) How can co-operation between institutions (in the use of buildings, such as libraries, school rooms) especially for regional tutorials) be effectively achieved? Could there be a cross-credit reciprocity of subjects?

(6) what is the existing computer expertise of staff?

(7) How will staff re-training be achieved? Especially in course design and practical hands-on skills?

(8) what needs to be done to address this situation? a plan of action.

(9) what's involved for students in terms of hardware and software costs.

(10) Are the students computer literate?

(11) What's involved for teachers individually in terms of

setting up and daily *servi*cing (talking to students) updating etc.

(12) What's involved for the institution in setting up costs, e.g. communication links, bricks and mortar, co-ordination with other education / public bodies.

(13) The after-sales service back up from the suppliers.

(14) Which course to start with?

some guidelines:

- unmet demand (students)
- an industry need
- a widely scattered student population

... and so on

These sorts of questions form an excellent basis for a brain-storming session with 'appropriate' academic and administrative staff and when done with sincerity and commitment can result in an excellent basis for a POLICY and IMPLEMENTATION PLAN.

IV Some Significant Advantages:

Like the print media that preceded it, mass produced programmes for delivery via electronic media, widens the audience but will it result in some degenerate 'plastic' product like the throw-away syndrome of mass produced goods?

I hope not, and here (perhaps altruistically) I state that good teachers, given the backing and encouragement of their institutions, will produce good work. The control must lie with teachers and not with the technologists. Academic rigor must prevail.

What are some of the advantages of this 'mass' production?

. economies of scale

. uniform (good quality) 'core' curriculum which will allow mobility of student transfer within a country and also assist in establishing uniform national accreditation

. 'flexible' courses - off the shelf modules to choose from so that from a given course a student can select one particular aspect to enhance existing knowledge (an elective) or a series of modules to qualify in a particular stream.

. more 'open' systems, that is, accessibility in education institutions.

. reduction in obsolescence of content due to lag time in preparation and update being diminished.

. faster feedback for both students and teachers.

. flexibility of student's time to participate:

. from home, from factory site, from regional centre

. flexibility of teacher's time to: input lesson notes, prepare lecture, attend to assignments, access student files from home via a modem (something hear for academic autonomy but also for high work ethics!)

. efficiency of Administration (with well trained staff and excellent service backup (an essential component). After all, if human beings can probe outer space and keep in touch by seemingly tenuous electronic links are terminal links that impossible on terra firma?

. more peer contact possible, thus breaking down isolation, by the establishment of a 'buddy' system, using electronic mail for students to be able to communicate with each other.

. an interactive one-to-one link between teacher and student

. self-paced learning (improved by instant feed back)- students might not be so long in the system thus cut down on administration costs of tracking them.

There is so much potential tied up in each of these media which, like the printing press when it was first used to disseminate information, will not be realised nor harnessed for many years to come.

Perhaps our role is to standby and be ready to know HOW to use the equipment effectively as it becomes more readily available.

Inspite of these wondrous technological connections, people must still get together face to face, from time to time. This is already in-built into most existing correspondence systems. They are often fraught with problems because participants are not apace so cannot contribute or gain from these residentials and tutorials. The new technologies offer means of increased motivation, and no doubt would be more easily controlled within a one-to-one computer link network. The trick, I suppose, is to work out meaningful, economical and effective dialogue between students and teacher not only face to face but via the electronic media. Perhaps if more people are doing a course more people will be at a set stage simultaneously and can therefore make a more viable group for a meeting. OR, using shades of past authoritarian teaching methods, students can be advised that in order to participate in a residential/tutorial they must be at a particular prerequisite stage. Perhaps you can think of other

possibilities.

Postscript:

I see Ed. Tech. as being two sides of the same coin - on the one side there is 'mass' media and on the other, individual learning (which implies self-paced learning).

(1) Mass Media broadcasts via live T.V. either using satellite, cable or conventional transmission systems, involving mass programme time slots, in real time.

(2) Individual Learning (using self-paced material which could well include a print-based work book) in a student's preferred time. Here the emphasis shifts from 'mass' but does not preclude it completely. It entails (to a greater or lesser degree) the 'mass' production of videotape, audio tape, laserdisc and computer programmes which are then available for use by individuals in individually scheduled time slots.

The prospects are really quite exciting as they will enable the design of more 'flexible' education systems at all levels of learning. This will open the doors of learning institutions to enhance the opportunities of people in remote areas who have had limited scope to span the tyrannies of distance. But, as significant, is the flexibility that the urban people who have been unable, for several reasons, to

attend colleges and universities will gain. As I list a few examples of these picture how they could benefit from the use of more extensive use of educational technology:

(i) Parents (mostly mothers) who are house bound due to commitments in bringing up a young family. There is often a need for the outside stimulation which education gives them - and the accompanying electronic mail contact with others!). University timetabling and delivery format either precludes their attendance or places a heavy strain on them.

(ii) Long term hospital patience, both young children and adults. Also nursing home patience could have access to stimulating programmes. It would alleviate the 'zombie-like' masks that seem to fall over the faces of once participating members of society.

(iii) Shift Workers whose job rosters have often made further studies difficult to pursue.

(iv) Office staff whose busy schedules often mean they miss evening lectures and assignment deadlines.

Adoption of technology is like preparing a thorny-

stemmed rose bush for next season's growth. If the bush is to blossom beautifully, it will need life giving water and plenty of fertiliser. But, not only that! it will need careful pruning - perhaps gloves to handle the thorny stems! The use of a sharp pair of secateurs will enable clean sharp cuts (as necessary) remembering to have the right 'slant' to the cut to avoid stem rot! The expert gets beautiful blossoms each year. I'll leave you to identify where the analogy fits in your educational institutions and systems!

Reference:

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INTERACTIVE MULTI-MEDIA LEARNING:
A BUSINESS CASE STUDY IN DISTANCE LEARNING

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INTRODUCTION

This paper will define the concept of Interactive Multi-Media Learning as an approach which uses the microcomputer as "the hub of a multi-media learning architecture". The approach is largely resource based and uses the concept of mastery learning.

It will address the appropriateness of a variety of media including video, computer based and audio in delivering distance education/ training to a potential target market of 23 000 employees drawing upon actual examples within the Standard Bank Group to illustrate the points made. The areas covered will include skills training, computer literacy, the training of D.P. professionals, computer end user training, sales training, management development and the development of interpersonal skills.

Finally, the paper will highlight the management issues that need to be addressed in an approach of this nature.

THE CHALLENGE

One of the major problems facing the country at present is that productivity-wise South Africa does not compare favourably with her major trading partners. If we examine the reasons behind this unsatisfactorily low performance, we can identify several complex and inter-related factors. These include historical, political, social, cultural and economic factors.

One major factor is the seeming paradox between a plentiful supply of labour on the one hand and a shortage of skilled or high level manpower on the other. Closing this gap between unskilled and skilled is perhaps one of the greatest challenges facing South Africa today. To improve our productivity, this situation will have to be reversed. Education, training and manpower development have a vital role to play.

The challenge we are facing is twofold:

1 How can we educate and train large numbers of workers in a relatively short space of time?

2 How can we take account of individual differences, including cultural differences, to make our training more effective?

To meet these challenges we will have to make better use of available technology to deliver training to greater numbers of people and at the same time use this technology to individualise learning in order to reduce the impact of individual differences on the learning process.

TECHNOLOGY AND TRAINING

Fortunately for us, the technological advances of the last two decades have not by-passed the training function. There are a number of exciting new developments in training technology which can assist us in our immense task.

The training technology available today is a far cry from the crude teaching machines of the 1950's. We are now in a position to achieve truly individualised learning using delivery systems which promote the concept of distance learning.

Take computer based learning (CBL) as an example.

CBL is an attempt to individualise learning. With CBL many of the functions of a trainer are performed by a computer. For example, presentation of the learning material, the use of examples, testing students acquisition of knowledge, providing feedback on results, and maintaining student records.

Students can master material from a terminal without having to have a trainer present and can practice material already taught to them. Costly, difficult or dangerous learning situations can be simulated by the computer without the student having to travel to a central training venue.

In addition, the computer never becomes bored and does not make value judgements about the learner's capability.

INTERACTIVE MULTI-MEDIA LEARNING

Throughout our work at the Standard Bank we've taken the term CBL to represent a concept which involves the computer "as the hub of a multi-media learning/teaching architecture."

By using sound educational/training concepts such as mastery learning, resource based learning and criterion referenced instruction; and by interfacing these concepts with a multi-media delivery system we have created an approach which can best be described as: "Interactive Multi-Media Learning" (IMML).

This approach uses all available technologies and media in combination to create a highly individualised and effective training system.

To do this effectively we need to focus on the strengths and weaknesses of each technology or learning medium, bearing in mind that if we combine them effectively we can reduce their weaknesses and increase their strengths.

Take the computer for example. One of its major strengths lies in its capacity to manage the learning process (i.e. routing students, evaluating, supplying feedback and keeping student records). It is much less effective in its ability to present information - indeed, other media or technologies such as video, text books and the instructor are more effective in carrying out this task. If, however, we combine these media we can arrive at an extremely effective delivery system.

To illustrate this point we can use a simple example.

If our objective is to train a bank clerk in the task of opening a current account for a new customer, the computer will be used to route the student to various resources such as a workbook, video, etc., pose questions to check mastery of the subject matter; and supply feedback. The workbook may contain the learning objectives, a description of the features and benefits of a current account and completed forms illustrating the information required from the customer. The video would present 'real life' situations illustrating the procedures carried out and would highlight the need for good customer relations. The instructor/teacher, if required, would be on hand to answer any queries, assist students who are struggling and lead discussion groups.

This example also illustrates the use of the concepts of mastery learning, resource based learning, criterion referenced instruction and individualised learning all combined into a multi-media approach.

What is important to remember, however, is that once developed this material can be disseminated to a vast number of trainees scattered throughout the country; and the training would be available wherever and whenever it is required on an individualised basis.

BENEFITS

Our research has confirmed that there are a number of benefits which can be gained by using a technology driven distance learning approach. Some of these benefits can be summarised as follows:

- course scheduling constraints no longer become a factor and training is available on demand;
- the learning is self-paced which serves to reduce group pressures and allows students to work through material according to their ability and preferred learning style;
- the learning is individualised which is important where one has individual differences between trainees such as cultural differences and differing levels of experience;
- reduced learning time, which is closely allied with individualised learning, can dramatically reduce training costs and improve productivity;
- standardisation of content and training methods, due to centralised courseware design and development, allows for the delivery of consistent high quality training.

Ongoing evaluation has further indicated that when students are required to interact with the learning material in a dynamic way, they show an increase in concentration and a motivation to learn.

SELECTION OF MEDIA

In our experience, the selection of the most appropriate media for technology driven distance learning depends on the type of training and the training target population.

A number of factors have to be considered:

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1 **Cost-effectiveness**

It makes little sense to use expensive technology when low cost technology, such as audiotape combined with a workbook, will be as effective. Choice of media must be based on effectiveness rather than on technological bias.

2 **Preferred Learning Style**

Providing the student with a variety of media, in combination, allows course designers to counter the problem of preferred learning styles. The student can then select the media which correspond with his/her learning style.

3 **Course Content**

The type of content i.e. knowledge and skill that the student needs to master often dictates the choice of media. If, for example, the course objectives involve the demonstration of acceptable interpersonal skills, then video based role play situations would provide the student with role modelling opportunities. It would be less appropriate to use other media apart from a tutor, and behaviour check lists in conjunction with the video models.

4 **Design constraints**

In computer based learning, the constraints imposed by the authoring software may prevent the use of techniques such as graphics or movement. Other media may be more effective - a factor which strengthens the need for a multi-media delivery system.

5 **Location**

Where the learning will take place often dictates the choice of media, particularly in the South African context. No electricity, for example, will prevent the use of all but the simplest media.

6 **Demographic factors** such as age, sex, language etc. have to be taken into account. Often, it is desirable to create training programmes in more than one language - an expensive process which influences the choice of media.

SOME USEFUL APPLICATIONS

1 **Training in Job Skills**

In this area we use a variety of media applications for distance learning, covering a spectrum of courses from Induction through all the clerical activities in the bank.

Part of our induction programme, for example, is handled on a self-teach basis in the work setting through an induction kit containing audio, print and video material.

A number of clerical skills are taught using the IMML concept, where students book time at an electronic learning station, either in the workplace or at a training centre nearby.

2 **Information Systems Training**

Computer literacy is handled via a combination of distance learning using video technology and hands-on exposure to computers using a CBL approach.

Computer end-user applications training and training for the DP professional is handled almost exclusively via CBL at or near the

employee's workplace. We are currently experimenting with videodisc technology in this important area.

3 **Customer Relations and Sales Training**

A number of programmes are currently in place which utilise video technology in the workplace coupled with the coaching concept. Video role models demonstrate desired behaviours as part of a multi-media training package, while line management become heavily involved in shaping subordinate behaviours through the use of simple coaching techniques based on social learning theory. The line managers use the training package to set clear expectations of behaviour on the one hand and as ongoing reinforcement on the other.

4 **Management Development**

Multi-media distance learning programmes are extremely useful for pre-course preparation prior to the manager attending a formal management development programme. Pre-requisite knowledge can be gained through audio/workbook programmes, computer based training programmes, the viewing of video material in the workplace or at home, and by a computer based pre-course diagnosis of strengths and weaknesses.

In the field of performance diagnosis, there are a number of computer based programmes currently available which enable the manager or groups of managers to diagnose their strengths and weaknesses in various areas of managerial skill.

These diagnostic tools can be used by individual managers to assess their own personal strengths and weaknesses prior to attending a management development programme. This allows them to obtain more benefit from the course, its content and interactions.

Computer based business simulations are useful learning tools in the field of management development. These simulations can either be built in as part of a formal course or, in the distance learning context, can be made available back in the workplace to allow the manager to hone his/her skills in a protected learning environment.

The best known theoretical approach to learning, which supports the use of computer based business simulations, is Kolb's experiential learning model which involves 4 phases:

- **Active experimentation:** the act of putting into effect new ideas and plans, and being prepared to risk their consequences.

- **Concrete experience:** the process of actually experiencing the results of any action.

- **Reflective observation:** the ability to become detached, and view the experience so gained from many different angles, and

- **Abstract conceptualisation:** the ability to create theoretical models to explain the events occurring. This stage leads to new understanding and new ideas and therefore to the need to try these out. Hence back to active experimentation and the cycle is repeated.

We believe that business games and computerised business simulations are ideally suited for educational purposes, since they can be made to embody all phases of the learning cycle.

MANAGEMENT ISSUES

There are a number of issues which need to be addressed if technology driven distance learning is to be successfully introduced into an organisation. Some of the more important issues are explored below.

1 Top Management Commitment

It is stating the obvious that without top management commitment it is extremely unlikely that a comprehensive, decentralised training delivery system can be established. The required investment in computer and communications technology is high, and without commitment from top management, the training division stands little chance of obtaining the necessary financial resources.

In the Standard Bank Group, we have been able to equip nearly all our branches with video playback equipment and have established a network of computer based learning centres across the country. Regional learning centres using the IMML concept, are operating in the major urban areas while satellite centres serve the needs of outlying branches or clusters of small branches. This allows students access to the required technology at or near their workplace.

In obtaining top management commitment, one of the ingredients for success is to have a business oriented training function.

Training managers are often their own worst enemy in this regard. They tend to present training as an overhead to the company instead of as a means to achieve increased productivity, sales, or quality of service.

In many corporations where training is still too often perceived as a corporate step-child, requests for money unrelated to results are invariably refused. If however, training is treated

as a business and run like one, top management will start to believe in it. But companies need proof that training is an investment that pays off because businesses think in terms of improving performance and increasing productivity. Training can achieve both, but it will not be treated seriously until it is sold in terms of the specific benefits that it brings.

Trainers, therefore, need to present training as a strategy contributing to the overall corporate strategic plan. This involves strategic planning and marketing the training function.

2 **Training Management Commitment**

The training and development function, and its people, need to be alive to the opportunities presented by technology.

The last few years have seen a number of breakthroughs particularly in the area of technology based training. However, acceptance of new technology based training, such as CBT and interactive video, is still low in many companies which given our needs in South Africa is surprising.

The advent of the micro-computer is placing computers and programming on the businessman's desk in ever increasing numbers. If trainers don't employ today's technology in their training activities, they will no longer be representing real life and the perceived value of training will become even less than it is at present.

In the initial stages, we found trainers who deliberately avoided introducing technology based training methods. Either they did not feel sufficiently trained on how to get the best out of the new techniques, or they were afraid that computers would take over their jobs. We converted these trainers to the cause with a concerted marketing effort and those who have taken the

initiative to creatively use the technology have found that their status has been automatically elevated.

3 **Human Resource Requirements**

In training and development, as in other strategic business units of a company, people are the most valuable resource. This applies equally if one wants to introduce a technology based approach to training and development.

Obtaining people with the right skills such as instructional designers, media specialists, course authors and video production personnel, is often difficult and time consuming. We have found that a strategy of developing these skills in-house, has paid dividends.

Selecting the right people with the right skills and welding them in to a highly committed and motivated team, is the secret for a successful implementation of technology based training systems.

CONCLUSION

It is our contention that an interactive multi-media distance learning approach will not only address the productivity problem in this country but will probably change the face of education and training for all time.

If education sets limits on the productivity of our workforce, and if conventional training methods are struggling to improve the present low level of productivity, we can, through technology, change the educational system and at the same time, deliver individualised learning to large numbers of our workforce across the country.

Traditional training methods will not keep pace with demand, and training based purely on these methods will not resolve the situation.

The answer lies in applying first world technology to a third world problem.

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